**DVD Receiver** HTS3400/37

Service
Service
Service

# Service Manual

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CLASS 1
LASER PRODUCT


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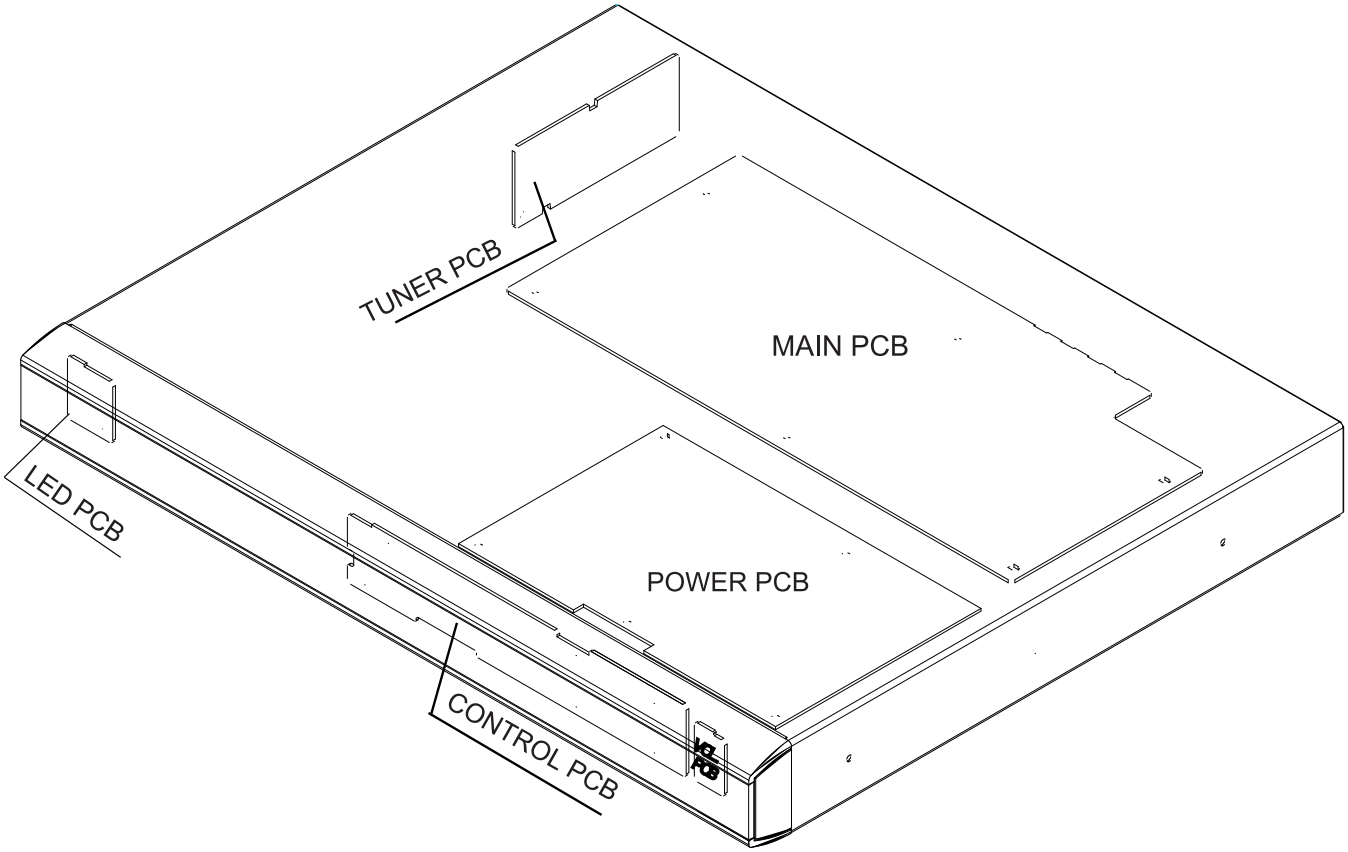
GB 3139 785 31270

Version 1.0


PHILIPS

# LOCATION OF PC BOARDS




# VERSION VARIATION:

| Type /Versions: / Features & Board in used: | HTS3400 / 37 |
|---|---|
| RDS | |
| Rotary Encoder (volume control) | x |
| Aux Input | x |
| Digital Output | x |
| Line Output | x |
| Progressive scan | x |
| Power supply (120V) | x |
| | |

# SPECIFICATIONS

## AMPLIFIER SECTION

Total output power
- Home Theater Mode..... 700W
- FTC .....330W
- Front & Rear ..... 50W① x2
- Center ..... 50W①
- Subwoofer ..... 80 W②

Frequency Response ..... 180 Hz - 16 kHz / ±3 dB
Signal-to-Noise Ratio..... > 60 dB (A-weight)
Input Sensitivity
AUX/TV In ..... 500 mV

① 3 ohm, 140 Hz - 20 kHz, 1% THD
② 3 ohm, 40 Hz - 2 kHz, 1% THD

## TUNER SECTION

Tuning Range ..... FM 87.5 – 108 MHz
.....AM 530 – 1710 kHz (10 kHz steps)
26 dB Quieting Sensitivity ..... FM 22 dBf
26 dB Quieting Sensitivity ..... AM 5000 μV/m
Image Rejection Radio ..... FM 25 dB
..... AM 28 dB
IF Rejection Ratio ..... FM 60 dB
..... AM 24 dB
Signal-to-Noise Ratio..... FM 55 dB
..... AM 40 dB
AM Suppression Ratio ..... FM 30 dB
Harmonic Distortion .....FM Mono 3 %
..... FM Stereo 3 %
..... AM 5 %
Frequency Response ..... FM180 Hz – 10 kHz / ±6 dB
Stereo Separation.....FM 26 dB (1 kHz)
Stereo Threshold ..... FM 23.5 dB

## DISC SECTION

Laser Type ..... Semiconductor
Disc Diameter ..... 12cm / 8cm
Video Decoding ..... MPEG-2 / MPEG-1
Video DAC ..... 10 Bits
Signal System ..... PAL / NTSC
Video Format ..... 4:3 / 16:9
Video S/N ..... 56 dB (minimum)
Composite Video Output ..... 1.0 Vp-p, 75 Ω
S-Video Output ..... Y - 1.0 Vp-p, 75 Ω
..... C - 0.286 Vp-p, 75 Ω
Audio DAC .....24 Bits / 96 kHz
Frequency Response ..... 4 Hz - 20 kHz (44.1kHz)
..... 4 Hz - 22 kHz (48kHz)
..... 4 Hz - 44 KHz (96KHz)
Digital Output .....
..... SPDIF (Sony Philips digital interface) Coaxial
- PCM ..... IEC 60958
- Dolby Digital .....IEC 60958, IEC 61937

## MAIN UNIT

Power Supply Rating ..... 120 V / 60 Hz
Power Consumption .....160W
Dimensions (w × h × d) ..... 435× 53 × 365 (mm)
Weight ..... 4.25 kg

## SPEAKERS

Front/Rear speakers
System .....2-way
Impedance ..... 3 Ω
Speaker drivers ..... 3" full-range woofer, 1" conical dome tweeter
Frequency response ..... 140 Hz – 20 kHz
Dimensions (w × h × d) ..... 93 × 169 × 65 (mm)
Weight ..... 0.73 kg (Front speaker)
0.77 kg (Rear speaker)

## CENTER SPEAKERS

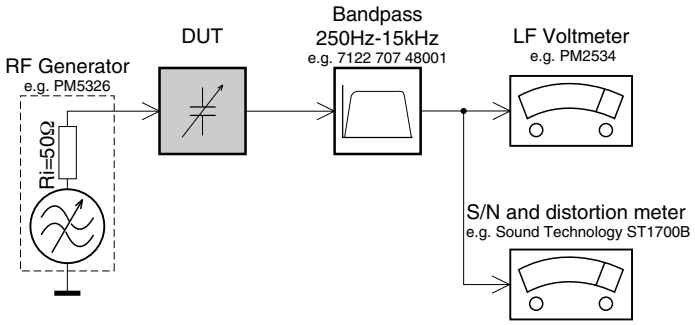
System ..... 2-way, maganetically sheided
Impedance ..... 3 Ω
speaker drivers .....2 x 3" full-range woofer, 1" conical dome tweeter
Frequency response ..... 140 Hz – 20 kHz
Dimensions (w × h × d) ..... 245 × 93 × 70 (mm)
Weight ..... 1.37 kg

## PASSIVE SUBWOOFER

Impedance ..... 3 Ω
speaker drivers ..... 6 1/2" woofer
Frequency response ..... 40 Hz – 2kHz
Dimensions (w × h × d) ..... 156 × 360 × 350 (mm)
Weight ..... 4.3 kg

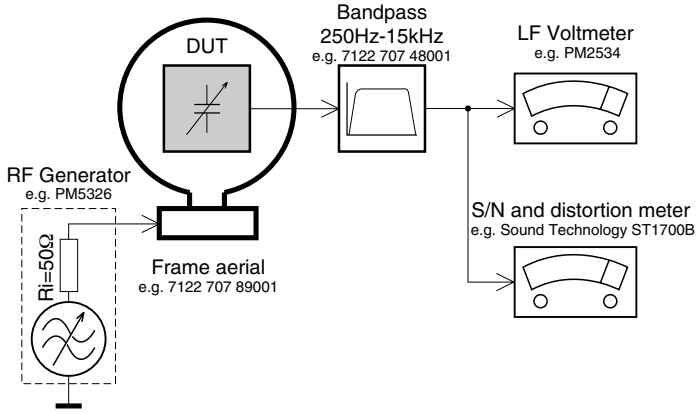
# MEASUREMENT SETUP

### *Tuner FM*




Use a bandpass filter to eliminate hum (50Hz, 100Hz) and disturbance from the pilottone (19kHz, 38kHz).

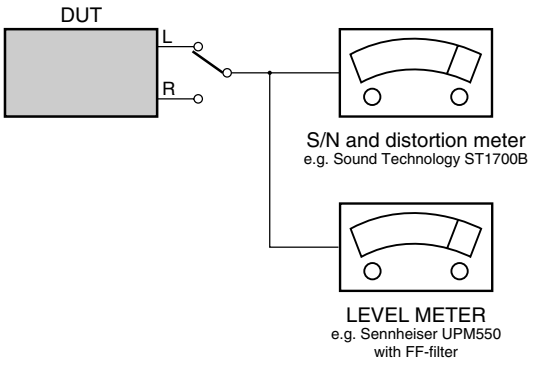
### *Tuner AM (MW,LW)*




To avoid atmospheric interference all AM-measurements have to be carried out in a Faraday´s cage.
Use a bandpass filter (or at least a high pass filter with 250Hz) to eliminate hum (50Hz, 100Hz).

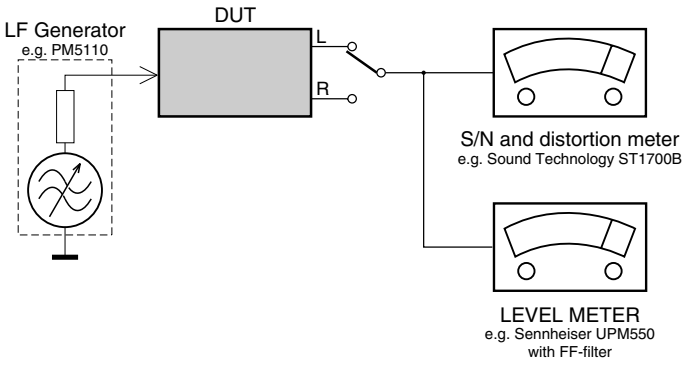
### *CD*

Use Audio Signal Disc SBC429 4822 397 30184
(replaces test disc 3)




### *Recorder*

Use Universal Test Cassette **CrO2** SBC419 4822 397 30069
or Universal Test Cassette **Fe** SBC420 4822 397 30071



# SERVICE AIDS

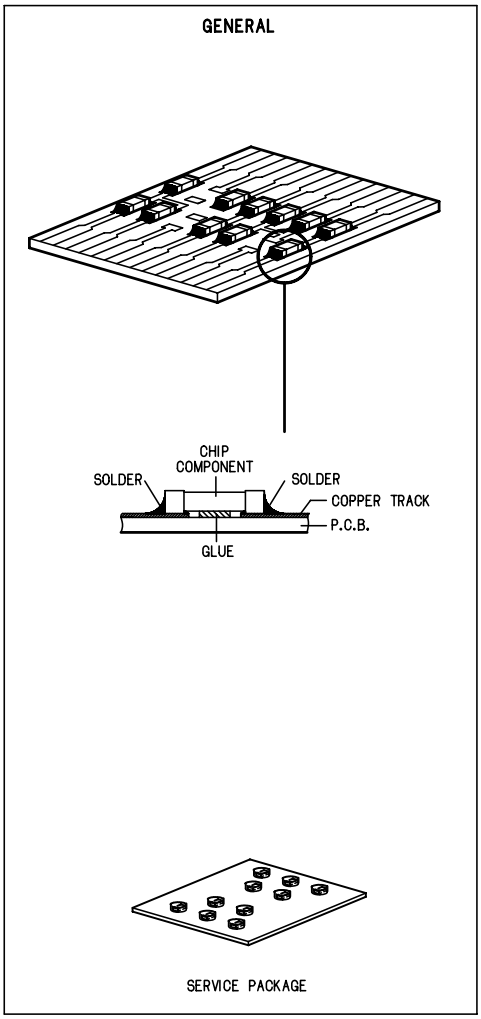
**Service Tools:**

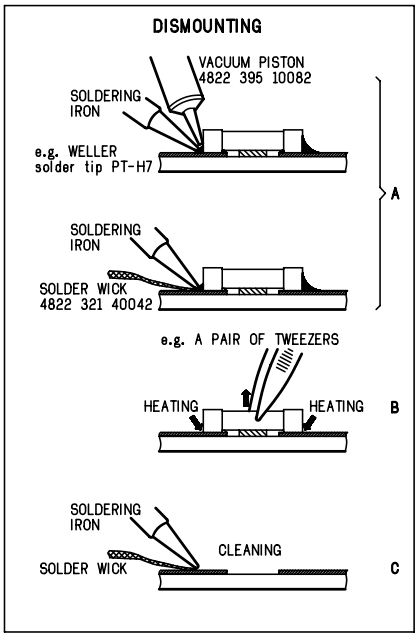
Universal Torx driver holder .....4822 395 91019
Torx bit T10  150mm .....4822 395 50456
Torx driver set T6-T20 .....4822 395 50145
Torx driver T10 extended .....4822 395 50423

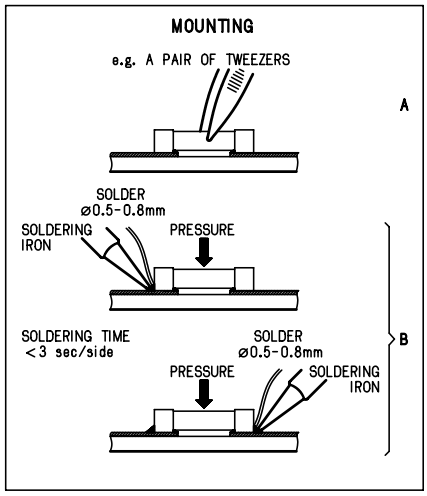
**Compact Disc:**

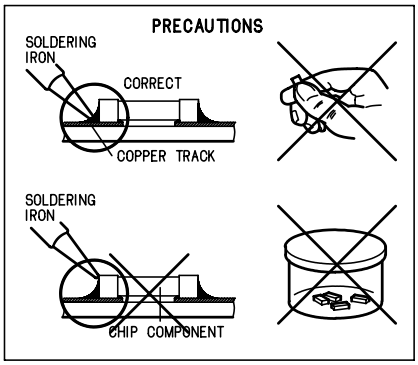
SBC426/426A Test disc 5 + 5A .....4822 397 30096
SBC442 Audio Burn-in test disc 1kHz .....4822 397 30155
SBC429 Audio Signals disc .....4822 397 30184
Dolby Pro-logic Test Disc .....4822 395 10216

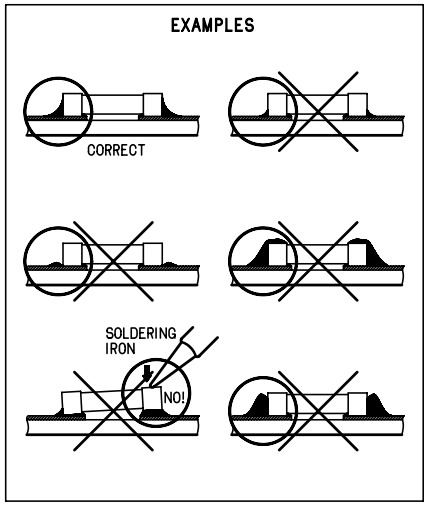
## HANDLING CHIP COMPONENTS



## ESD

**GB** **WARNING**

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically.
When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance.
Keep components and tools also at this potential.

**NL** **WAARSCHUWING**

Alle IC's en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD).
Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen.
Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.
Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

**F** **ATTENTION**

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD).
Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation.
Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfiler le bracelet serti d'une résistance de sécurité.
Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

**D** **WARNUNG**

Alle ICs und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD).
Unsorgfältige Behandlung im Reparaturfall kan die Lebensdauer drastisch reduzieren.
Veranlassen Sie, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand verbunden sind mit dem gleichen Potential wie die Masse des Gerätes.
Bauteile und Hilfsmittel auch auf dieses gleiche Potential halten.

**I** **AVVERTIMENTO**

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).
La loro longevità potrebbe essere fortemente ridatta in caso di non osservazione della più grande cauzione alla loro manipolazione.
Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza.
Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

**GB** **ESD PROTECTION EQUIPMENT**

Complete Kit ESD3 (small tablemat, wristband, connection box, estention cable and earth cable ..... 4822 310 10671
Wristband tester ..... 4822 344 13999

**GB**

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified, be used.

Safety components are marked by the symbol ⚠ .

**NL**

Veiligheidsbepalingen vereisen, dat het apparaat bij reparatie in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde, worden toegepast.

De Veiligheidsonderdelen zijn aangeduid met het symbol ⚠ .

**F**

Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utiliséés les piéces de rechange identiques à celles spécifiées.

Less composants de sécurité sont marqués ⚠ .

**D**

Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Original zustand des Geräts darf nicht verändert werden; für Reparaturen sind Original-Ersatzteile zu verwenden.

Sicherheitsbauteile sind durch das Symbol ⚠ markiert.

**I**

Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati i pezzi di ricambio identici a quelli specificati.

Componenty di sicurezza sono marcati con ⚠ .

**GB**

After servicing and before returning set to customer perform a leakage current measurement test from all exposed metal parts to earth ground to assure no shock hazard exist, The leakage current must not exceed 0.5mA.

**GB** **Warning !**

Invisible laser radiation when open.
Avoid direct exposure to beam.

**S** **Varning !**

Osynlig laserstrålning när apparaten är öppnad och spärren är urkopplad. Betrakta ej strålen.

**SF** **Varoitus !**

Avatussa laitteessa ja suojalukituksen ohitettaessa olet alttiina näkymättömälle laserisäteilylle. Älä katso säteeseen!

**DK** **Advarse !**

Usynlig laserstråling ved åbning når sikkerhedsafbrydere er ude af funktion. Undgå udsaettelse for stråling.

**F**

"Pour votre sécurité, ces documents doivent être utilisés par des spécialistes agréés, seuls habilités à réparer votre appareil en panne".

***Pb(Lead) Free Solder***

When soldering , be sure to use the pb free solder.

**INDENTIFICATION:**
Regardless of special logo (not always indicated)


one must treat all sets from **1 Jan 2005** onwards, according next rules:

**Important note:** In fact also products of year 2004 must be treated in this way as long as you avoid mixing solder-alloys (leaded/ lead-free). So best to always use SAC305 and the higher temperatures belong to this.

Due to lead-free technology some rules have to be respected by the workshop during a repair:

- Use only lead-free solder alloy Philips SAC305 with order code 0622 149 00106. If lead-free solder-paste is required, please contact the manufacturer of your solder-equipment. In general use of solder-paste within workshops should be avoided because paste is not easy to store and to handle.
- Use only adequate solder tools applicable for lead-free solder alloy. The solder tool must be able
  - To reach at least a solder-temperature of 400°C,
  - To stabilize the adjusted temperature at the solder-tip
  - To exchange solder-tips for different applications.
- Adjust your solder tool so that a temperature around 360°C – 380°C is reached and stabilized at the solder joint. Heating-time of the solder-joint should not exceed ~ 4 sec. Avoid temperatures above 400°C otherwise wear-out of tips will rise drastically and flux-fluid will be destroyed. To avoid wear-out of tips switch off un-used equipment, or reduce heat.
- Mix of lead-free solder alloy / parts with leaded solder alloy / parts is possible but PHILIPS recommends strongly to avoid mixed solder alloy types (leaded and lead-free).
  If one cannot avoid or does not know whether product is lead-free, clean carefully the solder-joint from old solder alloy and re-solder with new solder alloy (SAC305).
- Use only original spare-parts listed in the Service-Manuals. Not listed standard-material (commodities) has to be purchased at external companies.
- Special information for BGA-ICs:

– Always use the 12nc-recognizable soldering temperature profile of the specific BGA (for de-soldering always use the lead-free temperature profile, in case of doubt)

– Lead free BGA-ICs will be delivered in so-called 'dry-packaging' (sealed pack including a silica gel pack) to protect the IC against moisture. After opening, dependent of MSL-level seen on indicator-label in the bag, the BGA-IC possibly still has to be baked dry. (MSL=Moisture Sensitivity Level). This will be communicated via AYS-website.
  Do not re-use BGAs at all.

- For sets produced before 1.1.2005 (except products of 2004), containing leaded solder-alloy and components, all needed spare-parts will be available till the end of the service-period. For repair of such sets nothing changes.
- On our website **www.atyourservice.ce.Philips.com** you find more information to:

  - BGA-de-/soldering (+ baking instructions)
  - Heating-profiles of BGAs and other ICs used in Philips-sets

  You will find this and more technical information within the "magazine", chapter "workshop news".

  For additional questions please contact your local repair-helpdesk.

# System, Region code, Tuner, etc. setting procedure

## 1) System Reset

a) Press "SYSTEM" button on R/C. TV show "SETUP"
b) Select the menu using the "▼" and "►" button on R/C
c) Go feature setup page to do system reset

## 2) Region Code Change

After replacement / repair of the MPEG board, the customer setting and the region code may lost. Changing the Region code will put the player back in the state which it has left the factory.

Region Code

| | |
|---|---|
| 1 | USA |
| 2 | EU |
| 3 | AP |
| 4 | Australia, NZ, Latam |
| 5 | RUSSIA, INDIA |
| 6 | CHINA |

TV System

| | |
|---|---|
| 1 | NTSC |
| 2 | PAL |
| 3 | AUTO |

Menu/ Audio Subtitle (AS) Language

| | |
|---|---|
| 1 | English |
| 2 | English |
| 3 | English |
| 4 | English |

AFS

| | |
|---|---|
| 001 | LX3000D/LX3500D /MRD200 |
| 002 | MX3600D/MX3800 |
| 003 | LX3700D/LX3750W |
| 005 | MRD210 |
| 006 | MX3660D |
| 008 | FW-D550 |
| 010 | MRD120/MX6050/HTS3400 |

oem derivative

| |
|---|
| 08 |

- region code = 1 digit
- tv system = 1 digit
- "as/menu lang" = 1 digit
- "AFS" = "architechture Feature Set" = 3 digits

This field is used to define the architecture / features sets for each product.

- "oem derivative" = 2 digit

This field is use to define the OEM set. This will affect the background display.

Hence in total, reprograming will be done by way of the remote control. It should run as below :-

a) Put the player in stop mode. No disc loaded.
b) Press the following key on remote control:

For HTS3400 /37 (US) :
<PLAY> <159> <111> <010> <08> <PLAY>

✱ After the Region Code is changed it is necessary to reset the system so that the new Region Code will be fully effective. All customer setting will be lost.

✱ On top of the maximum number of times allowed for changing the region code is changed to 25.

✱ When the counter reach 25, you will not be able to further change the code until you reset the timer by the Region Code timer reset procedure

**CAUTION !**

**This information is confidencial and may not be distributed. Only a qualified service person should reprogram the Region Code.**

2-1

## 3) Region code change timer reset

Press below key to reset the timer :
a) In DISC source, stop mode and no disc in tray.
b) Press R/C "Play -159-PLAY" to reset timer to 25

## 4) Tuner area change

a) Press the "OPEN/CLOSE" button to open the set' s door
b) Press "1" "5" "9" button by using R/C.
c) TV Show "TUNER AREA"
d) Select the tuner area you want by using the "▼" and "►" button on R/C, then press "OK" to confirm. TV show " TUNER AREA CHANGED"
If you didn' t press it in five seconds, the system will remain original status.

| AREA | BAND | FREQUENCY ( Hz) | | STEP( Hz) |
|---|---|---|---|---|
| USA (37) | FM | 87.5M | 108M | 50K |
| | AM | 531K | 1602K | 9K |
| | | 530K | 1710K | 10K |

Note :-
Please refer to the above different tuner area.

## 5. Video Out Change

a) Press "SYSTEM" on R/C button
b) Select the menu using the "▼" and "►" button on R/C
c) Go picture setup page select Video out item.

## 6. Password Change

a) Press "SYSTEM" on R/C button
b) Select the menu using the "▼" and "►" button on R/C
c) Go feature setup page select "PASSWORD". TV show "ENTER CODE".Press 4 times of "STOP" button on R/C.
d) Select "PARENTAL" "8 ADULT" on TV.
e) Enter PASSWORD to "1234".
✱ "1234" is a default password supplied.

## 7. Checking on the Software version

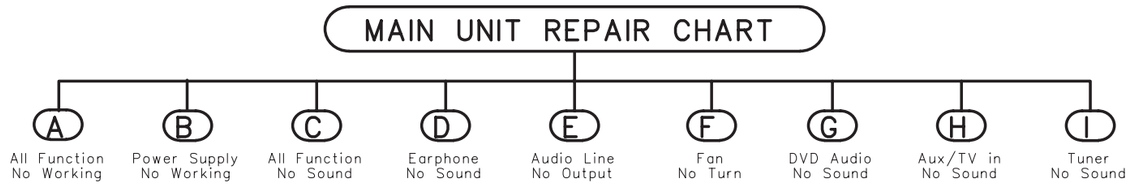
a) Open the CD door.
b) Press "123" and "OK" on the remote control.
c) TV will show the version on screen.

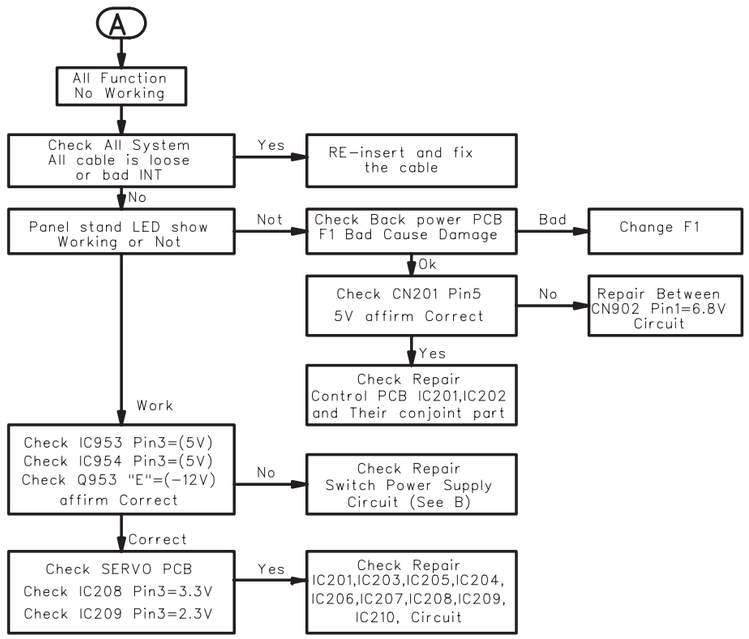
## 8. Upgrading new software

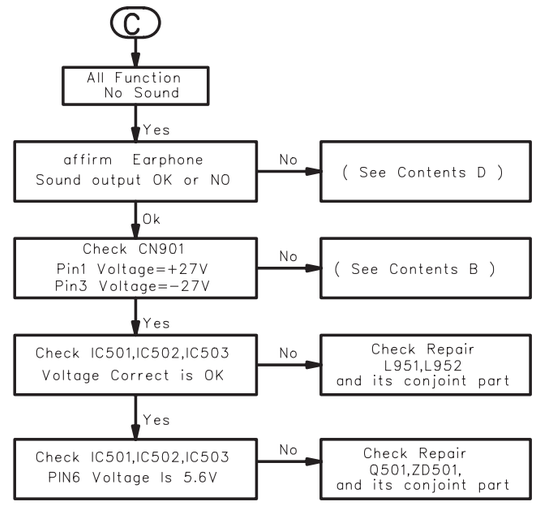
a) Open the door, then insert the CD-R program disc.
b) Close the door.
c) TV will show:-
- "disc loading"
- "bank30.rom"
- "writing" about 6 seconds.
- "Done"

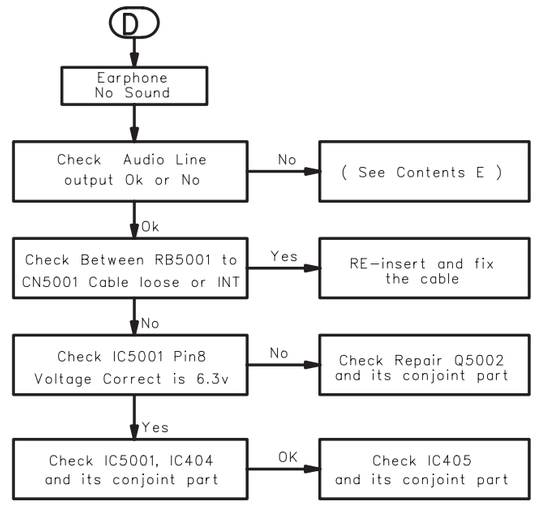
2-2

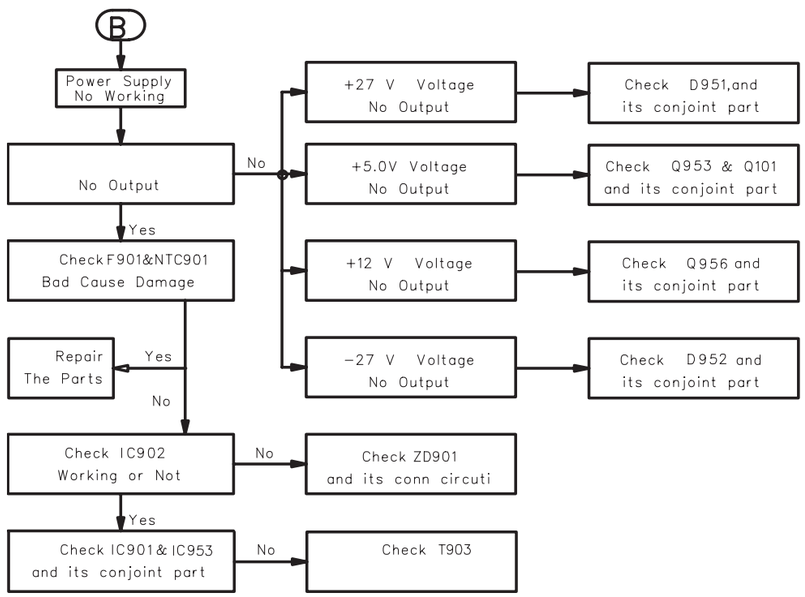
## REPAIR INSTRUCTIONS ( 1 of 2)

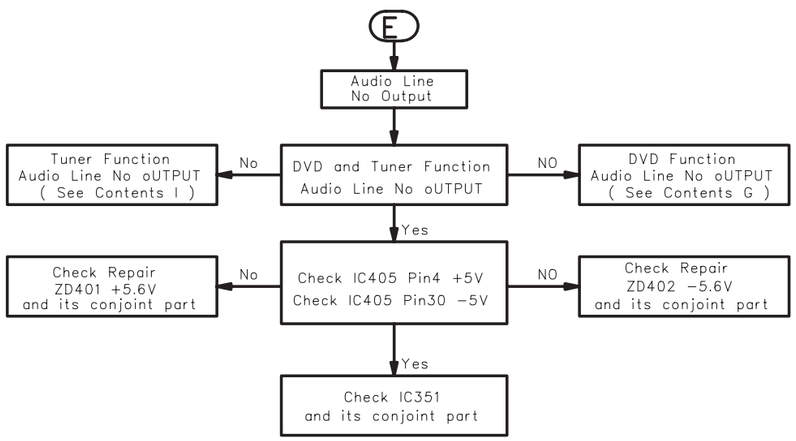


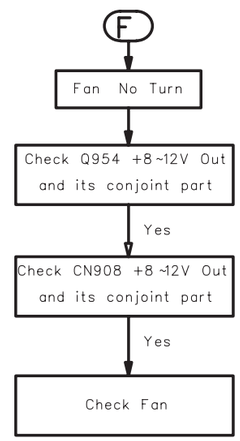


A
All Function No Working
Check All System All cable is loose or bad INT
Yes
RE-insert and fix the cable
No
Panel stand LED show Working or Not
Not
Check Back power PCB F1 Bad Cause Damage
Bad
Change F1
Ok
Check CN201 Pin5 5V affirm Correct
No
Repair Between CN902 Pin1=6.8V Circuit
Yes
Check Repair Control PCB IC201,IC202 and Their conjoint part
Work
Check IC953 Pin3=(5V) Check IC954 Pin3=(5V) Check Q953 "E"=(-12V) affirm Correct
No
Check Repair Switch Power Supply Circuit (See B)
Correct
Check SERVO PCB Check IC208 Pin3=3.3V Check IC209 Pin3=2.3V
Yes
Check Repair IC201,IC203,IC205,IC204, IC206,IC207,IC208,IC209, IC210, Circuit



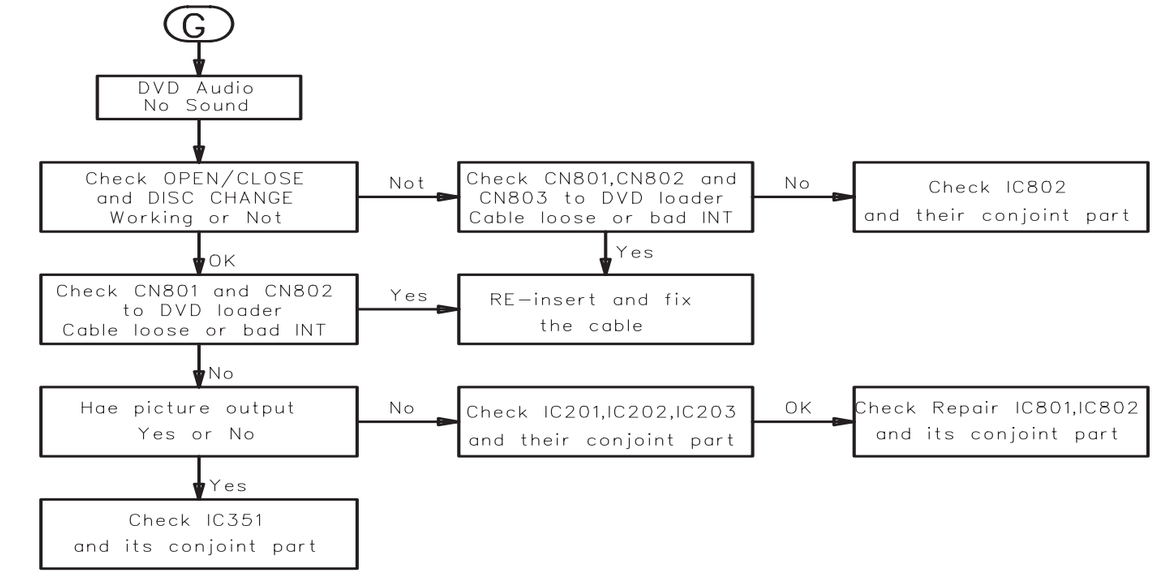



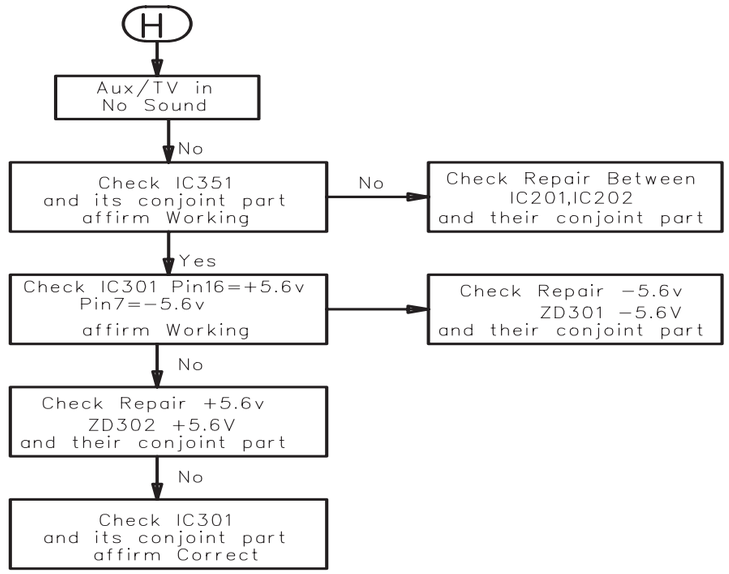


E
Audio Line No Output
Tuner Function Audio Line No oUTPUT ( See Contents I )
No
DVD and Tuner Function Audio Line No oUTPUT
NO
DVD Function Audio Line No oUTPUT ( See Contents G )
Yes
Check Repair ZD401 +5.6V and its conjoint part
No
Check IC405 Pin4 +5V Check IC405 Pin30 -5V
NO
Check Repair ZD402 -5.6V and its conjoint part
Yes
Check IC351 and its conjoint part

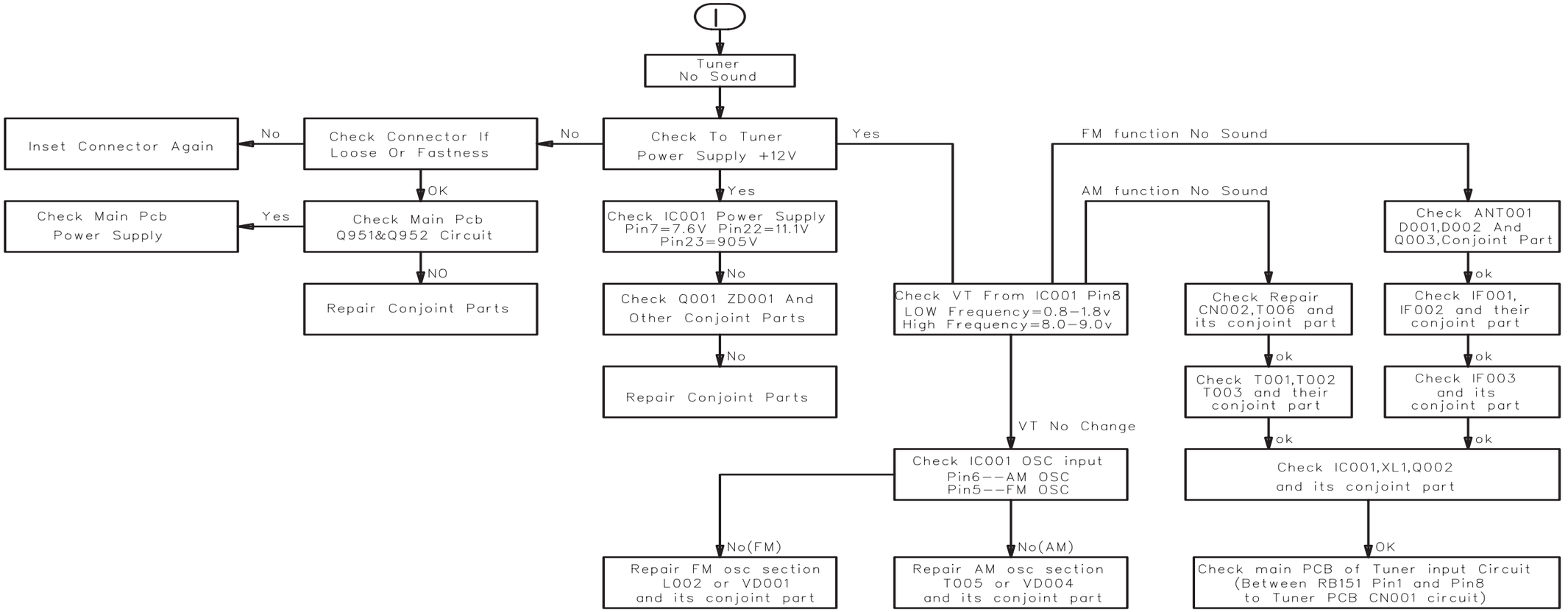


2-3

# REPAIR INSTRUCTIONS ( 2 of 2)



# DISASSEMBLY INSTRUCTIONS

## Dismantling of the Front Panel Assembly

1) Open the DVD Tray by using the Open/Close Button while the Set is ON and disconnect the mains supply after removing the Tray Cover.

   *Note: If this is not possible, the DVD Tray has to be open manually.*

   Take a mini screw driver about 2mm diameter and make a marking 24mm from the tip as shown in figure 2. place the set on its side, insert the mini screw driver till the marking and slide it towards the right as shown in figure 1 until the Tray moves out of the Front Panel.

2) Return the set to its upright position and remove the Tray Cover as shown in Figure 3 and close the tray manually by pushing it back in.

3) Loosen 9 screws and remove the Top Cover by lifting the rear portion upwards before sliding it out towards the rear.
   - 5 screws on the back
   - 2 screws each on the left & right side

4) Loosen 7 screws & lift up the top edge of Front Panel assembly to free some catches before sliding it out towards the front.
   - 4 screws on the bottom
   - 1 screw "E" on the inside as indicated in Figure 8.
   - 1 screw each on the left & right side

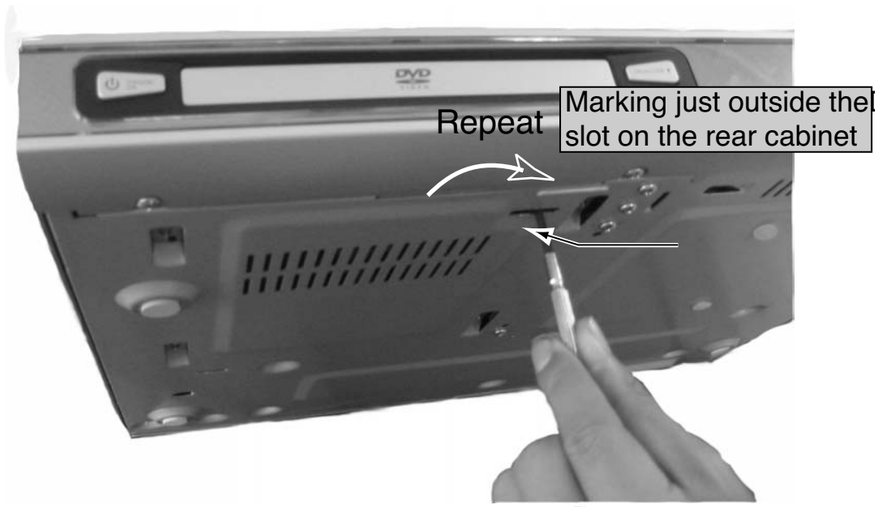



Figure 1

Figure 2

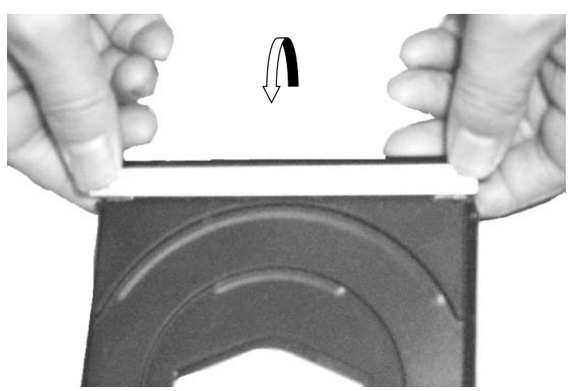


Figure 3



## Dismantling of the DVD Module

1) Loosen 4 screws "A" to remove the DVD Module as shown in figure 4.

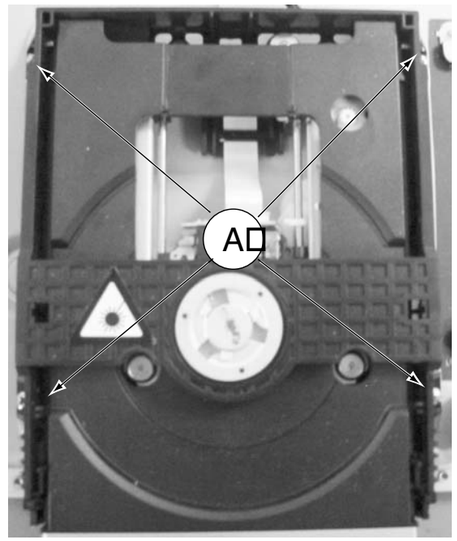



Figure 4

## Dismantling of the Power Board

1) Loosen 4 screws "B" at the top of the Power Board as shown in figure 5.

2) Release 2 catches "C" at the top of the Power Board as shown in figure 6.

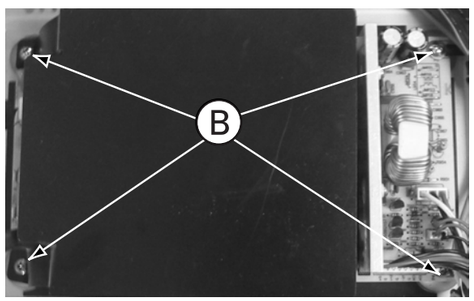



Figure 5

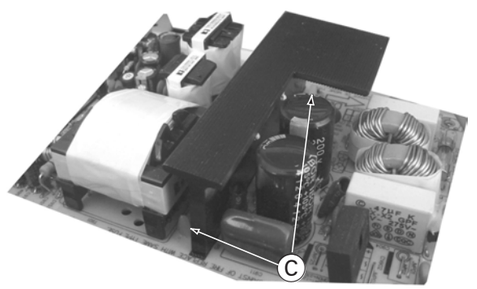



Figure 6

**Dismantling of the Main Board and Tuner Board**

1) Loosen 10 screw " D " at the back panel as shown in figure 7 .

2) Loosen 6 screw " E " on the top of main board as shown in figure 8.

3) Loosen 4 screw "F" on the top of tuner board as shown in figure 9.

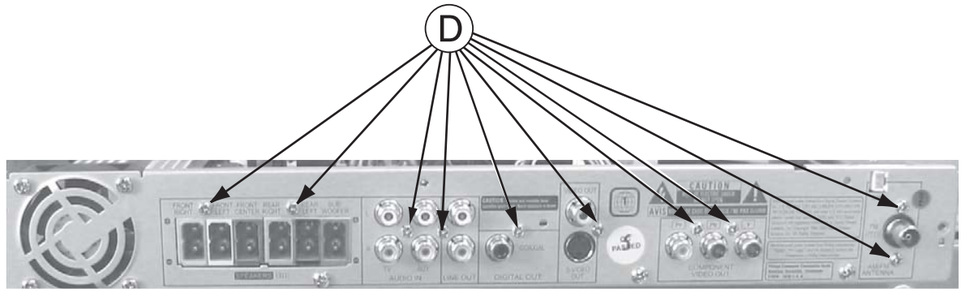



Figure 7

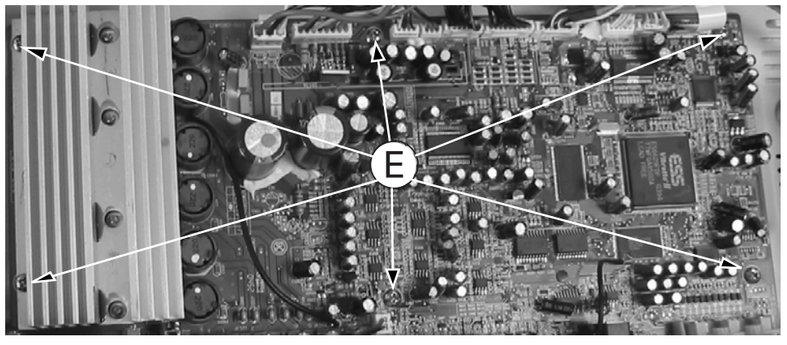



Figure 8

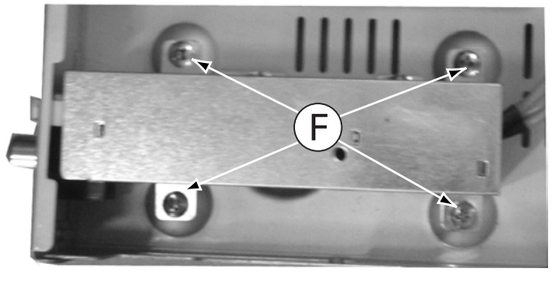



Figure 9



# SERVICE POSITIONS

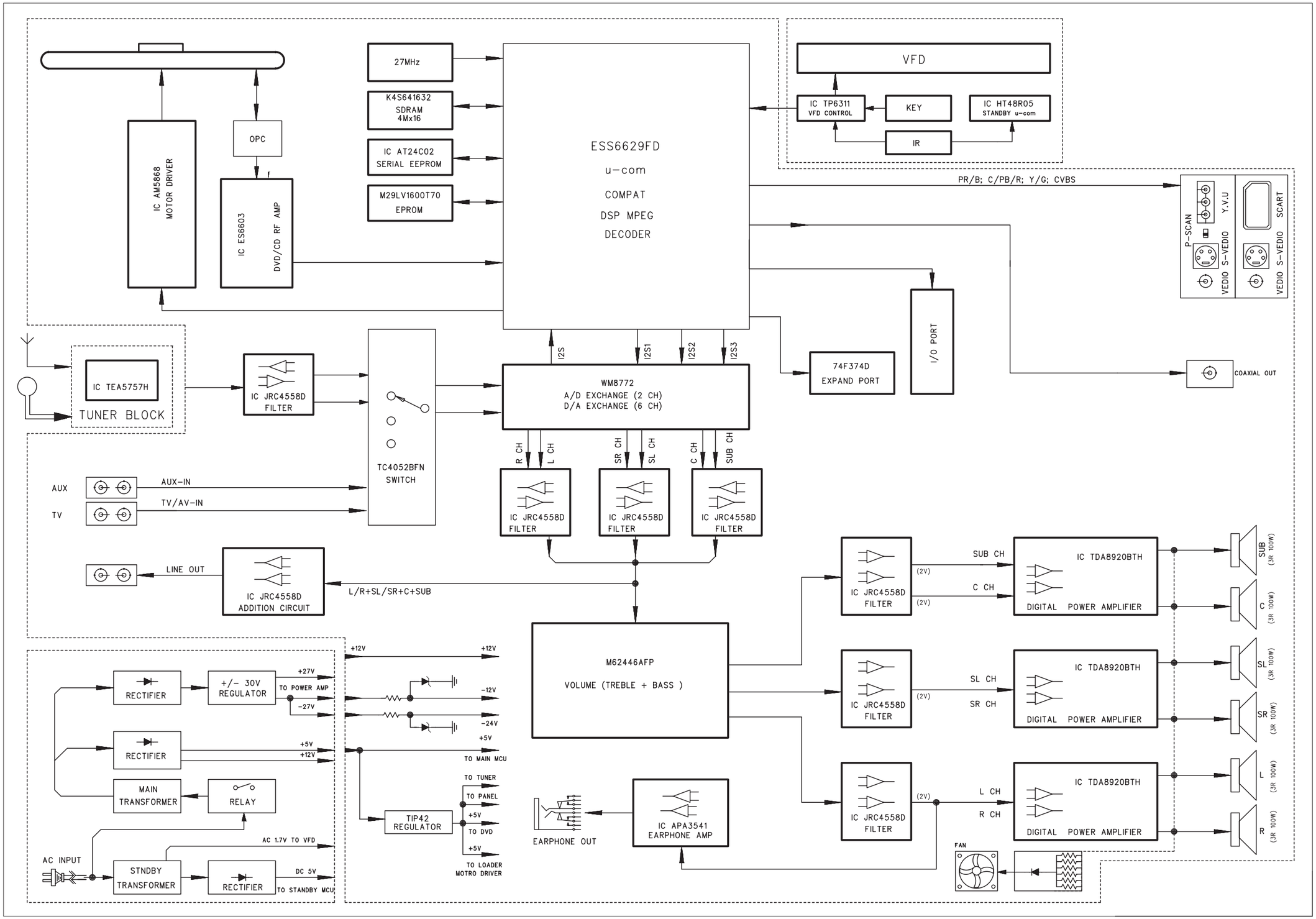
Service position A

Note: In some service positions the components or copper patterns of one board may risk touching its neighbouring pc boards or metallic parts. To prevent such short-circuit use a piece of hard paper or other insulating material between them.

Service position B

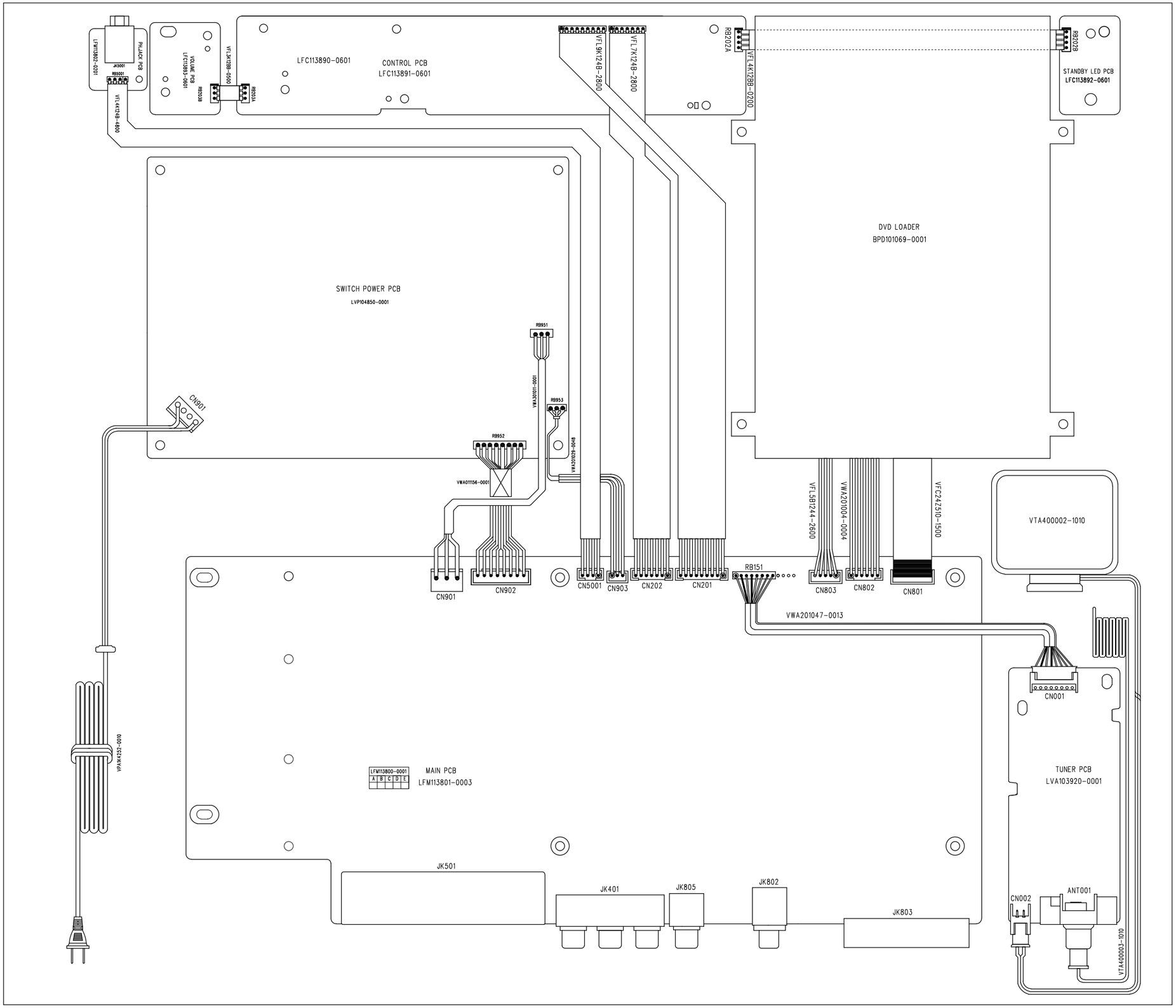
4-1

# BLOCK DIAGRAM



4-2

# WIRING DIAGRAM



# CONTROL/POWER SWITCH /VOLUME BOARD

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PCB Layout Top View ..... 5-3
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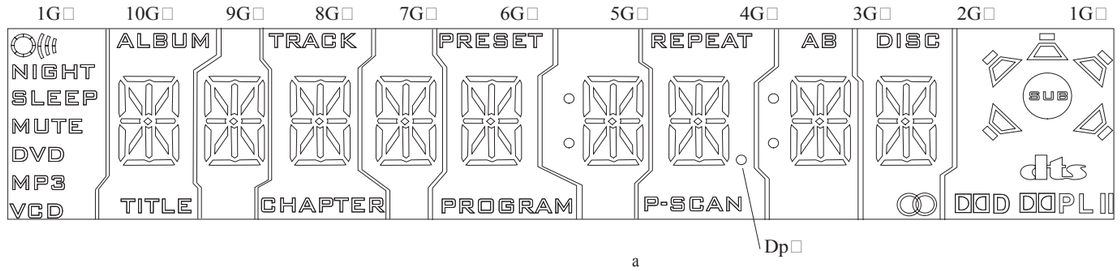
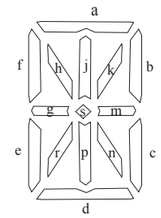
## FTD DISPLAY PIN ASSIGNMENT




(2G - 10G)

| | 10G | 9G | 8G | 7G | 6G | 5G | 4G | 3G | 2G | 1G |
|---|---|---|---|---|---|---|---|---|---|---|
| P1 | a | a | a | a | a | a | a | a | a | |
| P2 | b | b | b | b | b | b | b | b | b | |
| P3 | f | f | f | f | f | f | f | f | f | |
| P4 | h | h | h | h | h | h | h | h | h | SUB |
| P5 | j | j | j | j | j | j | j | j | j | |
| P6 | k | k | k | k | k | k | k | k | k | |
| P7 | m | m | m | m | m | m | m | m | m | dts |
| P8 | s | s | s | s | s | s | s | s | s | DD D |
| P9 | g | g | g | g | g | g | g | g | g | DD PL |
| P10 | c | c | c | c | c | c | c | c | c | II |
| P11 | e | e | e | e | e | e | e | e | e | |
| P12 | r | r | r | r | r | r | r | r | r | NIGHT |
| P13 | p | p | p | p | p | p | p | p | p | SLEEP |
| P14 | n | n | n | n | n | n | n | n | n | MUTE |
| P15 | d | d | d | d | d | d | d | d | d | DVD |
| P16 | | | | | | Col | Dp | Col | | MP3 |
| P17 | ALBUM | | TRACK | | PRESET | | REPEAT | A | DISC | V |
| P18 | TITLE | | CHAPTER | | PROGRAM | | P-SCAN | B | | CD |

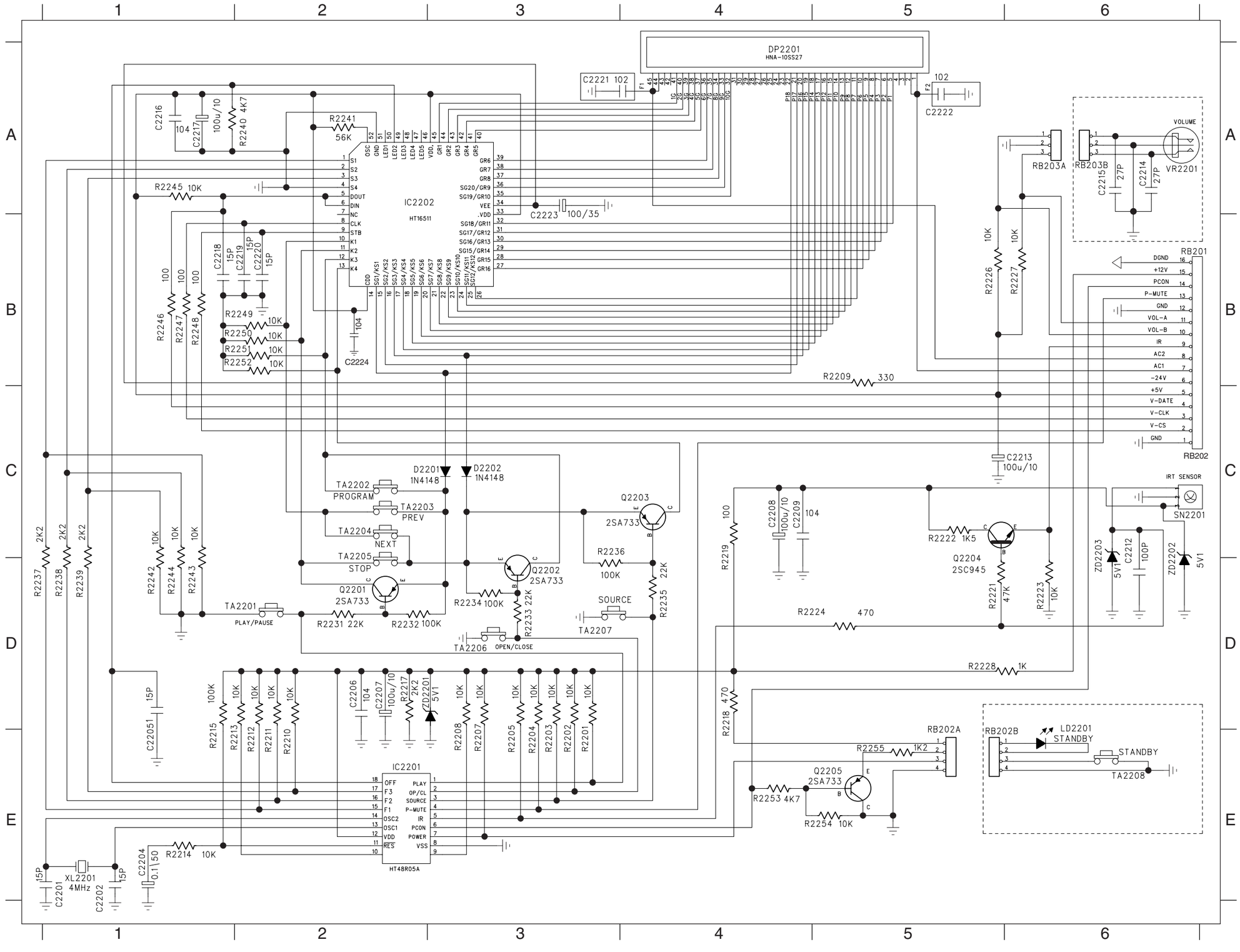
## *PIN CONNECTION*

| PIN NO. | 45 | 44 | 43 | 42 | 41 | 40 | 39 | 38 | 37 | 36 | 35 | 34 | 33 | 32 | 31 | 30 | 29 | 28 | 27 | 26 | 25 | 24 | 23 | 22 | 21 | 20 | 19 | 18 | 17 | 16 | 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CONNECTION | F2 | F2 | NP | NP | 1G | 2G | 3G | 4G | 5G | 6G | 7G | 8G | 9G | 10G | NX | P18 | P17 | P16 | P15 | P14 | P13 | P12 | P11 | P10 | P9 | P8 | P7 | P6 | P5 | P4 | P3 | P2 | P1 | NP | NP | F1 | F1 | | | | | | | | |

## Note ##
1. Fn: Filament pin
2. NP : No Pin
3. NX : No Extended Pin
4. nG : Grid Pin
5. PN : Anode Pin

5-2

# CIRCUIT DIAGRAM - KEY BOARD

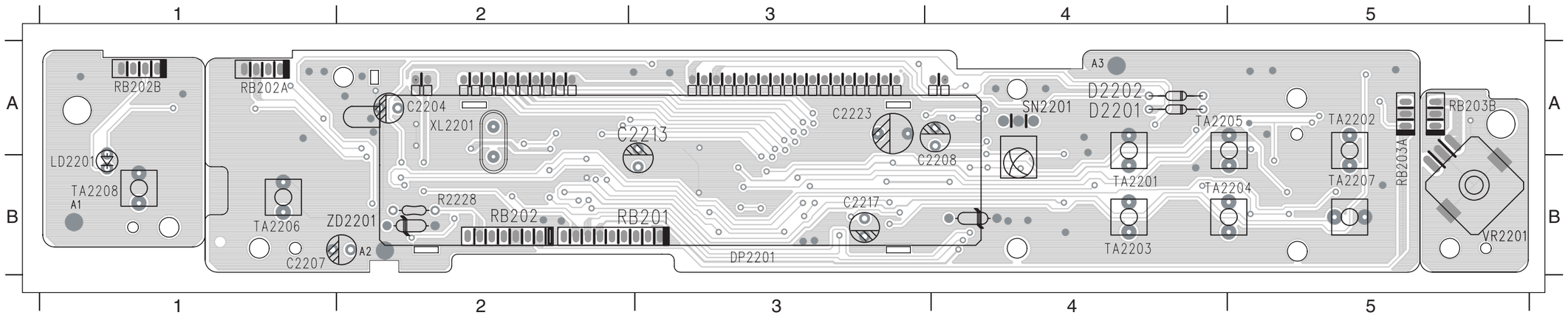



| | | | |
|---|---|---|---|
| C2201 | E1 | R2251 | B2 |
| C2202 | E1 | R2252 | B2 |
| C2204 | E1 | R2253 | E4 |
| C2206 | D2 | R2254 | E5 |
| C2207 | D2 | R2255 | E5 |
| C2208 | C4 | RB201 | B6 |
| C2209 | C4 | RB202 | C6 |
| C2212 | D6 | RB202A | E5 |
| C2213 | C5 | RB202B | E5 |
| C2214 | A6 | RB203A | A6 |
| C2215 | A6 | RB203B | A6 |
| C2216 | A1 | SN2201 | C6 |
| C2217 | A1 | TA2201 | D2 |
| C2218 | B1 | TA2202 | C2 |
| C2219 | B2 | TA2203 | C2 |
| C2220 | B2 | TA2204 | C2 |
| C2221 | A4 | TA2205 | C2 |
| C2222 | A5 | TA2206 | D3 |
| C2223 | A3 | TA2207 | D3 |
| C2224 | B2 | TA2208 | E6 |
| C22051 | D1 | VR2201 | A6 |
| D2201 | C2 | XL2201 | E1 |
| D2202 | C3 | ZD2201 | D3 |
| DP2201 | A4 | ZD2202 | D6 |
| IC2201 | E2 | ZD2203 | D6 |
| IC2202 | A2 | | |
| LD2201 | E6 | | |
| Q2201 | D2 | | |
| Q2202 | D3 | | |
| Q2203 | C4 | | |
| Q2204 | D5 | | |
| Q2205 | E5 | | |
| R2201 | D3 | | |
| R2202 | D3 | | |
| R2203 | D3 | | |
| R2204 | D3 | | |
| R2205 | D3 | | |
| R2207 | D3 | | |
| R2208 | D3 | | |
| R2209 | B5 | | |
| R2210 | D2 | | |
| R2211 | D2 | | |
| R2212 | D2 | | |
| R2213 | D2 | | |
| R2214 | E1 | | |
| R2215 | D1 | | |
| R2217 | D2 | | |
| R2218 | D4 | | |
| R2219 | C4 | | |
| R2221 | D5 | | |
| R2222 | C5 | | |
| R2223 | D6 | | |
| R2224 | D5 | | |
| R2226 | B5 | | |
| R2227 | B6 | | |
| R2228 | D5 | | |
| R2231 | D2 | | |
| R2232 | D2 | | |
| R2233 | D3 | | |
| R2234 | D3 | | |
| R2235 | D4 | | |
| R2236 | D3 | | |
| R2237 | D1 | | |
| R2238 | D1 | | |
| R2239 | D1 | | |
| R2240 | A2 | | |
| R2241 | A2 | | |
| R2242 | D1 | | |
| R2243 | D1 | | |
| R2244 | D1 | | |
| R2245 | A1 | | |
| R2246 | B1 | | |
| R2247 | B1 | | |
| R2248 | B1 | | |
| R2249 | B2 | | |
| R2250 | B2 | | |

5-3

## PCB LAYOUT - KEY BOARD ( TOP)

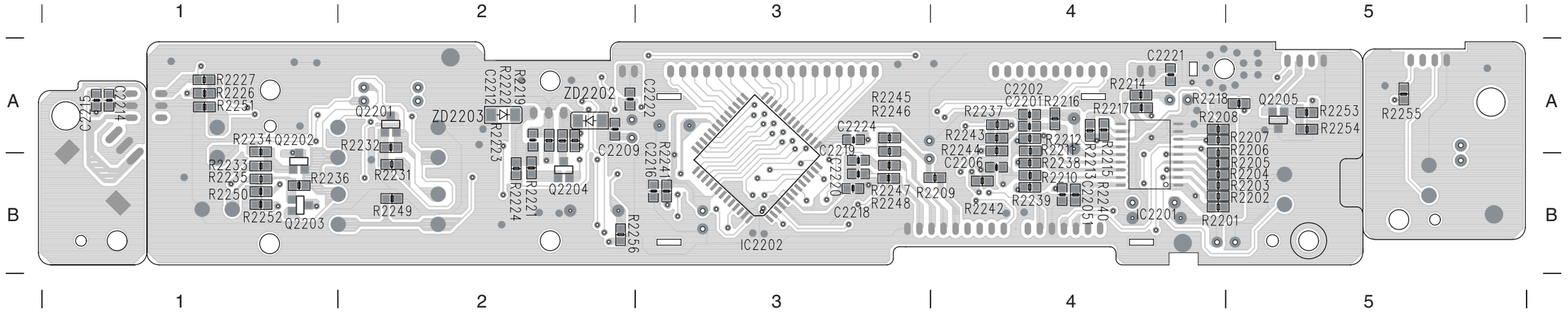
| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| C2204 | A2 | D2201 | A4 | RB202 | B2 | TA2201 | B4 | TA2207 | B5 | A2 | B2 |
| C2207 | B1 | D2202 | A4 | RB202A | A1 | TA2202 | A5 | TA2208 | B1 | A3 | A4 |
| C2208 | B4 | DP2201 | B3 | RB202B | A1 | TA2203 | B4 | VR2201 | B5 | | |
| C2213 | A3 | LD2201 | B1 | RB203A | A5 | TA2204 | B4 | XL2201 | A2 | | |
| C2217 | B3 | R2228 | B2 | RB203B | A5 | TA2205 | A4 | ZD2201 | B2 | | |
| C2223 | A3 | RB201 | B2 | SN2201 | A4 | TA2206 | B1 | A1 | B1 | | |




## PCB LAYOUT - KEY BOARD ( BOTTOM)

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C2201 | A4 | C2219 | B3 | Q2202 | B1 | R2207 | A5 | R2216 | A4 | R2227 | A1 | R2239 | B4 |
| C2202 | A4 | C2220 | B3 | Q2203 | B1 | R2208 | A4 | R2217 | A4 | R2231 | B2 | R2240 | B4 |
| C2206 | B4 | C2221 | A4 | Q2204 | B2 | R2209 | B4 | R2218 | A4 | R2232 | A2 | R2241 | B3 |
| C2209 | A2 | C2222 | A3 | Q2205 | A5 | R2210 | B4 | R2219 | A2 | R2233 | B1 | R2242 | B4 |
| C2212 | A2 | C2224 | A3 | R2201 | B4 | R2211 | A4 | R2221 | B2 | R2234 | A1 | R2243 | A4 |
| C2214 | A1 | C22051 | B4 | R2202 | B5 | R2212 | A4 | R2222 | A2 | R2235 | B1 | R2244 | A4 |
| C2215 | A1 | IC2201 | B4 | R2203 | B5 | R2213 | A4 | R2223 | A2 | R2236 | B1 | R2245 | A3 |
| C2216 | B3 | IC2202 | B3 | R2204 | B5 | R2214 | A4 | R2224 | B2 | R2237 | A4 | R2246 | A3 |
| C2218 | B3 | Q2201 | A2 | R2205 | B5 | SR2215 | A4 | R2226 | A1 | R2238 | B4 | R2247 | B3 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| R2248 | B3 | ZD2202 | A2 | | | | | | | | | | |
| R2249 | B2 | ZD2203 | A2 | | | | | | | | | | |
| R2250 | B1 | | | | | | | | | | | | |
| R2251 | A1 | | | | | | | | | | | | |
| R2252 | B1 | | | | | | | | | | | | |
| R2253 | A5 | | | | | | | | | | | | |
| R2254 | A5 | | | | | | | | | | | | |
| R2255 | A5 | | | | | | | | | | | | |
| R2256 | B2 | | | | | | | | | | | | |



# TUNER BOARD

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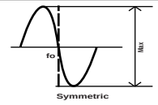
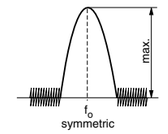
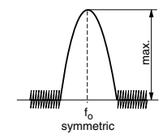
PCB Layout View (Bottom) ..... 6-4




## TUNER ADJUSTMENT TABLE

| Waverange | Input frequency | Input | Tuned to | Adjust | Output | Scope/Voltmeter |
|---|---|---|---|---|---|---|
| *VARICAP ALIGNMENT* | | | | | | |
| **FM** 87.5 - 108MHz (50kHz grid) | | | 108MHz | check | | 6.5V ±0.2V |
| | | | 87.5MHz | check | | 1.0V ±0.5V |
| **AM** 530-1710kHz (10kHz grid) ( 21L / 21L / 37S ) | | | 1602KHz | check | | 7.8V ±0.2V |
| | | | 531KHz | T005 | | 1.1V ±0.5V |
| | | | 1700KHz | check | | 8.0V ±0HV |
| | | | 530KHz | T005 | | 1.1V ±0.2V |
| *FM - IF* | | | | | | |
| **FM** | 10.7MHz, 50mV continuous wave | | IC001 pin 23 — short circuit to block AFC — 200P | No need to adjust | |   |
| *FM - RF* | | | | | | |
| **FM** | 108MHz | mod=1kHz Δf=±22.5kHz | 106MHz | VC001 | MAX | MAX |
| | 87.5MHz | | 90.1MHz | L001 | | |
| *AM IF* | | | | | | |
| **AM** | 450kHz<br>Connect pin 29 of IC001 (AM Osc.) with short wire to ground (pin 6) | Δf = ±15kHz $V_{RF}$ = 3mV | IC001 pin 24 — 100nF — R220 | T001<br>T002 | MAX |   |
| *AM AFC* **MW** | | ΔV=mV | | T003 | | |
| *AM RF* [3] | | | | | | |
| **MW** | 1404kHz | Δf = ±30kHz $V_{RF}$ as low as possible | 1404kHz | VC001 | MAX |   |
| | 576kHz | | 612kHz | T006 | | |
| | 1400kHz | | 1400kHz | VC002 | | |
| | 610kHz | | 610kHz | T006 | | |

Use Service Testprogram. By selecting the TUNER TEST test frequencies will be stored as preset frequencies automatically.

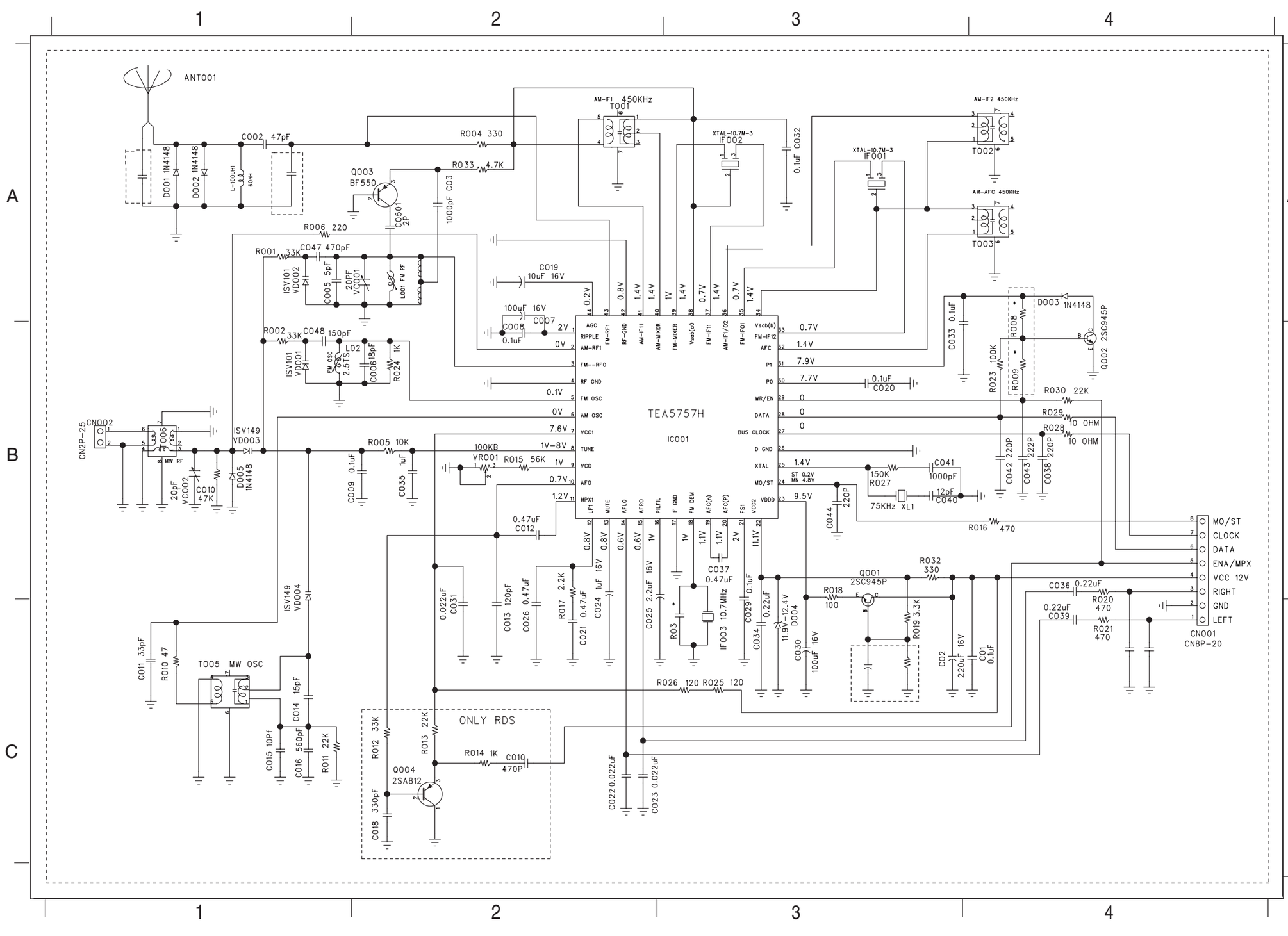
1) If sensitivity of frequency counter is too low adjust to max. channel separation (input signal: stereo left 90% + 9%, adjust output on right channel to minimum)

2) RC network serves for damping the IF-filter while adjusting the other one.

3) For AM RF adjustments the original frame antenna has to be used!

6-2

# CIRCUIT DIAGRAM - TUNER BOARD

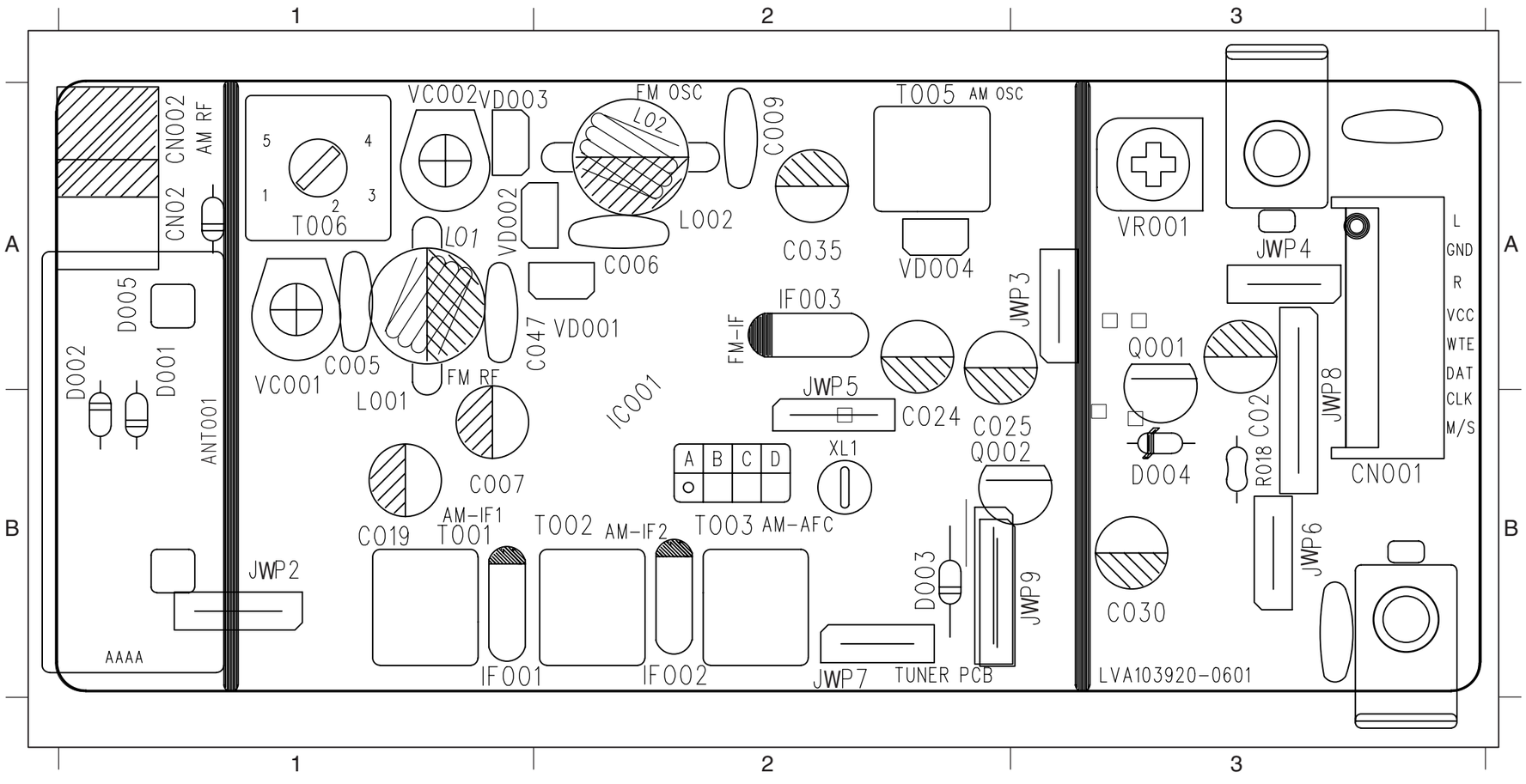



| | | | |
|---|---|---|---|
| ANT001 | A1 | R004 | A2 |
| C002 | A1 | R005 | B2 |
| C005 | A1 | R006 | A1 |
| C007 | A2 | R010 | C1 |
| C006 | B2 | R011 | C1 |
| C008 | B2 | R015 | B2 |
| C009 | B2 | R016 | B4 |
| C01 | C4 | R017 | C2 |
| C02 | C3 | R018 | B3 |
| C03 | A2 | R019 | C3 |
| C010 | B1 | R020 | B4 |
| C011 | C1 | R021 | C4 |
| C012 | B2 | R023 | B4 |
| C013 | C2 | R024 | B2 |
| C014 | C1 | R025 | C3 |
| C015 | C1 | R026 | C3 |
| C016 | C1 | R027 | B3 |
| C019 | A2 | R028 | B4 |
| C020 | B3 | R029 | B4 |
| C021 | C2 | R030 | B4 |
| C022 | C2 | R032 | B3 |
| C023 | C2 | R033 | A2 |
| C024 | C2 | T001 | A2 |
| C025 | C2 | T002 | A4 |
| C026 | C2 | T003 | A4 |
| C029 | C3 | T005 | C1 |
| C030 | C3 | T006 | B1 |
| C031 | C2 | VC001 | A2 |
| C032 | A3 | VC002 | B1 |
| C033 | B3 | VD001 | B1 |
| C034 | C3 | VD002 | A1 |
| C035 | B2 | VD003 | B1 |
| C036 | B4 | VD004 | C1 |
| C037 | B3 | VR001 | B2 |
| C038 | B4 | XL1 | B3 |
| C039 | C4 | | |
| C040 | B3 | | |
| C041 | B3 | | |
| C042 | B4 | | |
| C043 | B4 | | |
| C044 | B3 | | |
| C047 | A1 | | |
| C048 | B1 | | |
| C0501 | A2 | | |
| CN001 | C4 | | |
| CN002 | B1 | | |
| D001 | A1 | | |
| D002 | A1 | | |
| D003 | A4 | | |
| D004 | C3 | | |
| D005 | B1 | | |
| IC001 | B3 | | |
| IF001 | A3 | | |
| IF002 | A3 | | |
| IF003 | C3 | | |
| L02 | B1 | | |
| L001 | A2 | | |
| Q001 | B3 | | |
| Q002 | B4 | | |
| Q003 | A2 | | |
| R001 | A1 | | |
| R002 | B1 | | |

6-3

# PCB LAYOUT - TUNER BOARD (TOP)

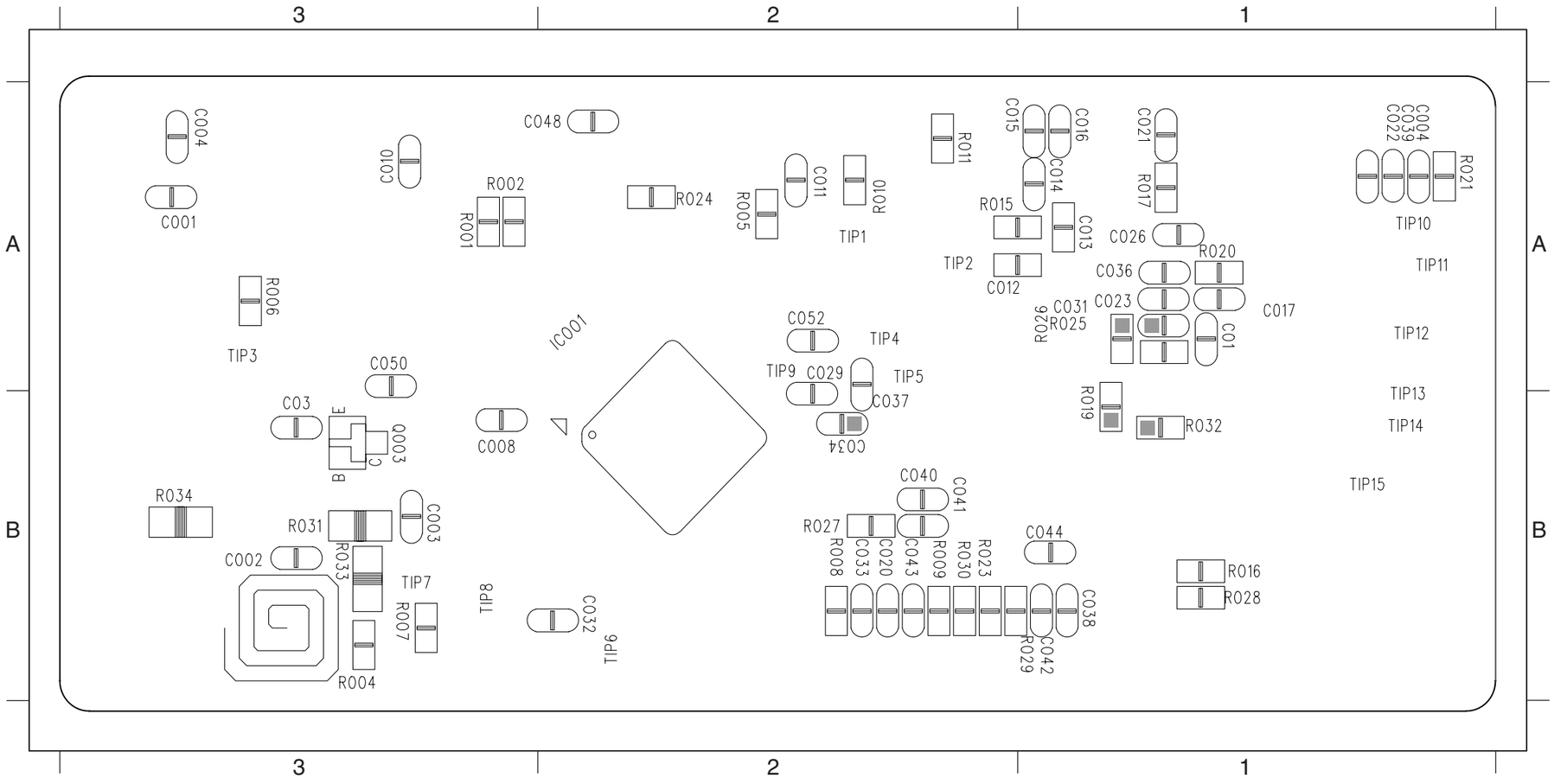
| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ANT001 | B1 | C025 | B2 | D002 | A1 | IF003 | A2 | JWP8 | A3 | T001 | B1 | VD001 | A2 |
| C005 | A1 | C030 | B3 | D003 | B2 | JWP2 | B1 | JWP9 | B3 | T002 | B2 | VD002 | A1 |
| C006 | A2 | C035 | A2 | D004 | B3 | JWP3 | A3 | L02 | A2 | T003 | B2 | VD003 | A1 |
| C007 | B1 | C047 | A1 | D005 | A1 | JWP4 | A3 | L001 | B1 | T005 | A2 | VD004 | A2 |
| C009 | A2 | CN001 | B3 | IC001 | B2 | JWP5 | B2 | Q001 | A3 | T006 | A1 | VR001 | A3 |
| C019 | B1 | CN002 | A1 | IF001 | B1 | JWP6 | B3 | Q002 | B2 | VC001 | A1 | XL1 | B2 |
| C024 | B2 | D001 | A1 | IF002 | B2 | JWP7 | B2 | R018 | B3 | VC002 | A1 | | |



6-4

# PCB LAYOUT - TUNER BOARD (BOTTOM)

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C01 | A3 | C013 | A3 | C023 | A3 | C037 | A2 | C048 | A2 | R005 | A2 | R019 | B3 | R028 | B3 |
| C03 | B3 | C014 | A3 | C026 | A3 | C038 | B3 | C050 | A3 | R006 | A3 | R020 | A3 | R029 | B3 |
| C001 | A3 | C015 | A2 | C029 | A2 | C039 | A3 | C052 | A2 | R007 | B3 | R021 | A3 | R030 | B2 |
| C002 | B3 | C016 | A3 | C031 | A3 | C040 | B2 | IC001 | A2 | R010 | A2 | R023 | B2 | R031 | B3 |
| C008 | B3 | C020 | B2 | C032 | A2 | C041 | B2 | Q003 | B3 | R011 | A2 | R024 | A2 | R032 | B3 |
| C010 | A3 | C021 | A3 | C033 | B2 | C042 | B3 | R001 | A3 | R015 | A2 | R025 | A3 | R033 | B3 |
| C011 | A2 | C022 | A3 | C034 | B2 | C043 | B2 | R002 | A3 | R016 | B3 | R026 | A3 | R034 | B3 |
| C012 | A2 | C023 | A3 | C036 | A3 | C044 | B3 | R004 | B3 | R017 | A3 | R027 | B2 | | |



# DVD LOADER

It is not recommended for component repair on this Module but to replace the major assembly when it becomes defective. Therefore limited service parts list are published in this chapter.

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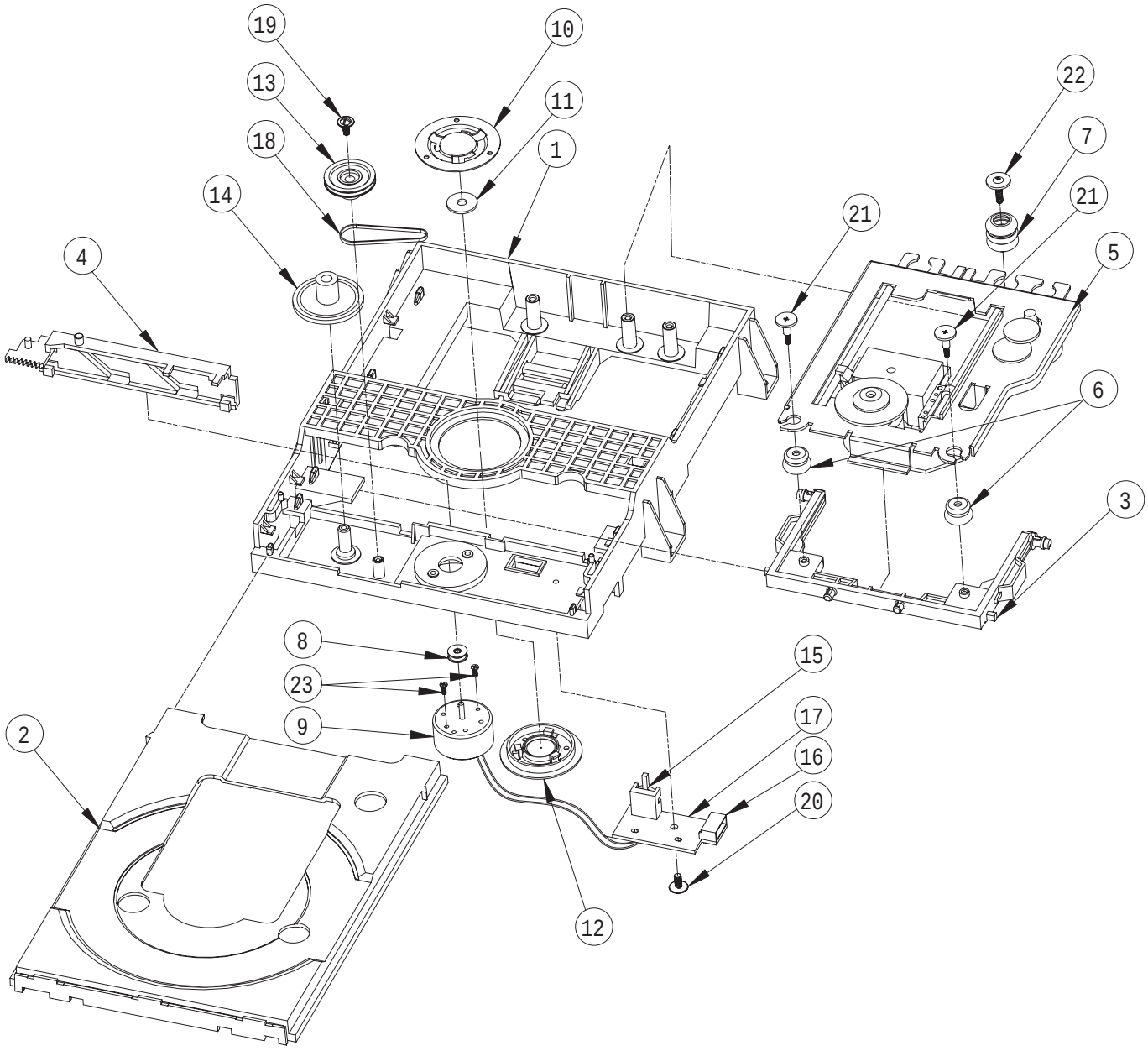
Explorer View (DVD Loader) ..... 7-2

# Exploded view



# MAIN BOARD

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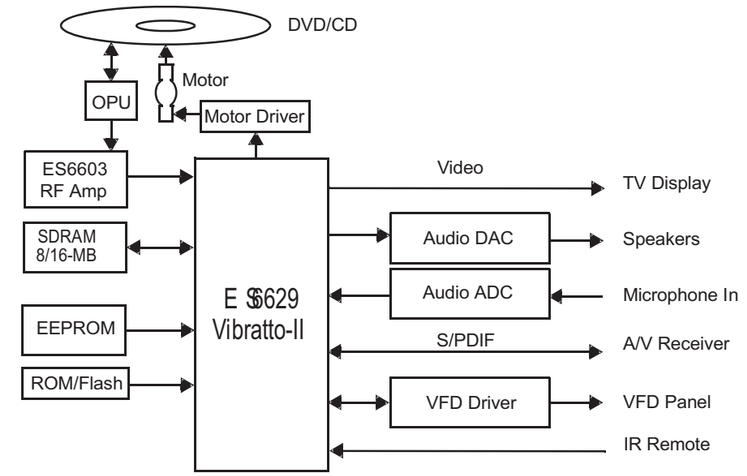
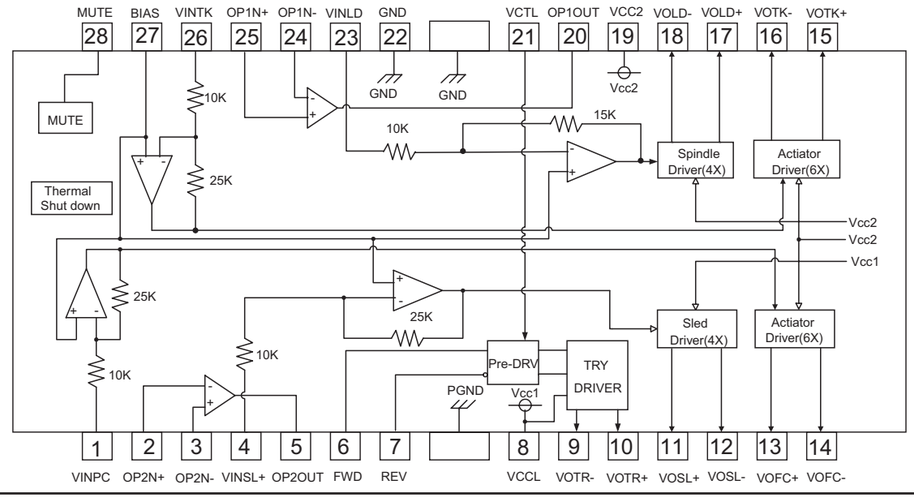
PCB Layout Bottom View ..... 8-6


8-1

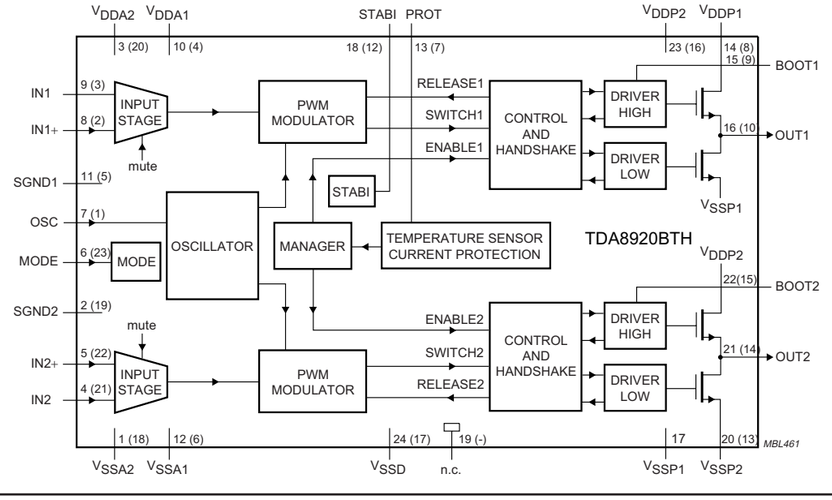
## ES6629F INTERNAL IC DIAGRAM




## AM5868S INTERNAL IC DIAGRAM




## TDA8920BTH INTERNAL IC DIAGRAM



8-2

# VOLTAGES

IC201 (ES6629F)

| PIN NO | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Voltage | 3.3 | 1.77 | 1.77 | 1.77 | 3.3 | 3.3 | 3.3 | 1.5 | 0 | 3.3 | 1.4 | 1.5 | 1.5 | 1.5 | 1 | 0 | 0 | 0 | 3.3 | 0.1 |
| PIN NO | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| Voltage | 3.3 | 2.8 | 3.1 | 3 | 0.2 | 0 | 2 | 0.2 | 3.3 | 3 | 1.3 | 1.3 | 1.4 | 0 | 3.3 | 1.4 | 1.3 | 1.3 | 1.2 | 1.3 |
| PIN NO | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |
| Voltage | 1.4 | 1.4 | 0 | 3.3 | 1.5 | 1.1 | 1.2 | 1.2 | 1.2 | 1.3 | 1.6 | 0 | 3.3 | 0.1 | 3.3 | 0 | 0 | 0 | 0 | 0 |
| PIN NO | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 |
| Voltage | 0 | 3.3 | 1.3 | 1.6 | 2.6 | 1.8 | 1.2 | 2.5 | 0.7 | 0 | 2 | 2 | 1.1 | 1.7 | 2 | 2.6 | 2 | 0 | 3.3 | 2 |
| PIN NO | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
| Voltage | 2 | 2 | 3.3 | 3.3 | 3.3 | 0 | 2 | 0 | 3.3 | 0 | 0.7 | 0.9 | 1.7 | 1.4 | 0 | 3.3 | 1.7 | 1.8 | 1.6 | 1 |
| PIN NO | 101 | 102 | 103 | 104 | 105 | 106 | 107 | 108 | 109 | 110 | 111 | 112 | 113 | 114 | 115 | 116 | 117 | 118 | 119 | 120 |
| Voltage | 1.2 | 1.6 | 1.6 | 3.3 | 0 | 1.3 | 2.1 | 1.3 | 3.3 | 0.6 | 3.3 | 0 | 1 | 0.8 | 0.7 | 1.6 | 1 | 0 | 0 | 0 |
| PIN NO | 121 | 122 | 123 | 124 | 125 | 126 | 127 | 128 | 129 | 130 | 131 | 132 | 133 | 134 | 135 | 136 | 137 | 138 | 139 | 140 |
| Voltage | 0 | 1.5 | 1.6 | 1.6 | 1.2 | 3.3 | 0 | 3.3 | 3 | 3.6 | 3.6 | 3.6 | 0.2 | 3.3 | 3.3 | 3.3 | 0 | 2 | 1.3 | 0 |
| PIN NO | 141 | 142 | 143 | 144 | 145 | 146 | 147 | 148 | 149 | 150 | 151 | 152 | 153 | 154 | 155 | 156 | 157 | 158 | 159 | 160 |
| Voltage | 2 | 1.6 | 0 | 1.6 | 1.5 | 0 | 3.3 | 2.1 | 0.9 | 1.5 | 1.3 | 3.3 | 1.5 | 1.5 | 1.5 | 1.5 | 0 | 0 | 1.5 | 1.5 |
| PIN NO | 161 | 162 | 163 | 164 | 165 | 166 | 167 | 168 | 169 | 170 | 171 | 172 | 173 | 174 | 175 | 176 | 177 | 178 | 179 | 180 |
| Voltage | 1.5 | 3.3 | 0.6 | 2.19 | 1.5 | 1.5 | 0 | 1.5 | 3 | 3.3 | 2.1 | 1.5 | 1.7 | 1.5 | 1.6 | 1.7 | 2.5 | 2.5 | 0 | 2.4 |
| PIN NO | 181 | 182 | 183 | 184 | 185 | 186 | 187 | 188 | 189 | 190 | 191 | 192 | 193 | 194 | 195 | 196 | 197 | 198 | 199 | 200 |
| Voltage | 3.3 | 0 | 3.3 | 3.3 | 3.3 | 0 | 0 | 2.4 | 0 | 2.4 | 0 | 0.7 | 3.3 | 3.3 | 3.3 | 0 | 0 | 2.1 | 5 | 5 |
| PIN NO | 201 | 202 | 203 | 204 | 205 | 206 | 207 | 208 | | | | | | | | | | | | |
| Voltage | -0.4 | -0.4 | -0.4 | 4 | 4 | 3.3 | 3.1 | 0 | | | | | | | | | | | | |

IC202 (MX26LV800BTC)

| PIN NO | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Voltage | 0 | 1.2 | 1.7 | 2.6 | 2 | 1.2 | 2.5 | 0.7 | 0 | 0 | 0 | 3.2 | 0 | 0 | 1.3 | 0 | 0 | 2.1 | 2.5 | 1.7 |
| PIN NO | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| Voltage | 2 | 1.9 | 2.1 | 2.1 | 2.1 | 0 | 0 | 0 | 1.8 | 1.2 | 1.9 | 1.7 | 1.2 | 1.3 | 1.2 | 3.3 | 1.5 | 1.2 | 2 | 1.2 |
| PIN NO | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | | | | | | | | | | | | |
| Voltage | 1.7 | 1.2 | 1.5 | 2 | 0 | 0 | 0 | 0 | | | | | | | | | | | | |

IC203 (EDS6416AHTA-6B-E)

| PIN NO | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Voltage | 3.3 | 1.3 | 3.3 | 1.2 | 1.4 | 0 | 1.4 | 1.3 | 3.3 | 1.1 | 1.1 | 0 | 1.4 | 3.3 | 0.1 | 3 | 3.1 | 3 | 2.8 | 0.2 |
| PIN NO | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| Voltage | 0.2 | 0.1 | 0 | 0 | 0.5 | 1.5 | 3.3 | 0 | 1.4 | 1.5 | 1.5 | 1.5 | 1 | 0 | 0.1 | 1.6 | 3.3 | 1.6 | 0.1 | 0 |
| PIN NO | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | | | | | | |
| Voltage | 0 | 1.2 | 3.3 | 1.2 | 1.2 | 0 | 1.1 | 1.1 | 3.3 | 1.4 | 1.5 | 0 | 1.4 | 0 | | | | | | |

IC206 (74F374D)

| PIN NO | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Voltage | 0 | 3.8 | 1.2 | 1.7 | 3.8 | 4.3 | 1.4 | 0.8 | 0.1 | 0 | 5 | 4 | 0.1 | 1.5 | 4 | 0 | 1.9 | 1.2 | 3.5 | 3.3 |
| PIN NO | 21 | 22 | | | | | | | | | | | | | | | | | | |
| Voltage | 4.5 | 0 | | | | | | | | | | | | | | | | | | |

IC207 (74F374D)

| PIN NO | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Voltage | 0 | 3.8 | 1.2 | 1.7 | 3.8 | 4.3 | 1.4 | 0.8 | 0.1 | 0 | 5 | 4 | 0.1 | 1.5 | 4 | 0 | 1.9 | 1.2 | 3.5 | 3.3 |
| PIN NO | 21 | 22 | | | | | | | | | | | | | | | | | | |
| Voltage | 4.5 | 0 | | | | | | | | | | | | | | | | | | |

IC209 (AP1117E18LA)

| PIN NO | 1 | 2 | 3 |
|---|---|---|---|
| Voltage | 3.3 | 2.2 | 1.0 |

IC210 (AP1117E33LA)

| PIN NO | 1 | 2 | 3 |
|---|---|---|---|
| Voltage | 5 | 3.3 | 0 |

IC301 (CD4052BM)

| PIN NO | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Voltage | 0 | 0 | 0 | 0 | 0 | 0 | 5.6 | 0 | 3.8 | 3.8 | 0 | 0.1 | 0 | 0 | 0 | 5.8 |

IC351 (WM8772SEDS)

| PIN NO | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Voltage | 0 | 1.7 | 1.7 | 3.3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 5 | 0 | 5 | 5 | 0 | 0 |
| PIN NO | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | | | | | | | | | | | | |
| Voltage | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | | | | | | | | | | | | |

IC401 (RC4558D)

| PIN NO | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Voltage | 0 | 0 | 0 | -12 | 0 | 0 | 0 | 12 |

IC402 (RC4558D)

| PIN NO | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Voltage | 0 | 0 | 0 | -12 | 0 | 0 | 0 | 12 |

IC403 (RC4558D)

| PIN NO | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Voltage | 0 | 0 | 0 | -12 | 0 | 0 | 0 | 12 |

IC404 (RC4558D)

| PIN NO | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Voltage | 0 | 0 | 0 | -12 | 0 | 0 | 0 | 12 |

IC405 (M62446AFP)

| PIN NO | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Voltage | 0 | 0 | 0 | 0 | 5.6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PIN NO | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| Voltage | 4.5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | -6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 | 0.1 |
| PIN NO | 41 | 42 | | | | | | | | | | | | | | | | | | |
| Voltage | 4.6 | 4.9 | | | | | | | | | | | | | | | | | | |

IC406 (RC4558D)

| PIN NO | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Voltage | 0 | 0 | 0 | -12 | 0 | 0 | 0 | 12 |

IC407 (RC4558D)

| PIN NO | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Voltage | 0 | 0 | 0 | -12 | 0 | 0 | 0 | 12 |

IC408 (RC4558D)

| PIN NO | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Voltage | 0 | 0 | 0 | -12 | 0 | 0 | 0 | 12 |

IC409 (RC4558D)

| PIN NO | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Voltage | 0 | 0 | 0 | -12 | 0 | 0 | 0 | 12 |

IC501 (TDA8920BTH)

| PIN NO | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Voltage | 1.5 | 0.7 | 2 | 1.5 | 4.6 | 0 | 0 | 4.5 | 0 | 0 | 2.1 | 2.2 | 2.2 | 1.8 | 2.1 | 2.1 | 1.1 | 3.1 | 4.5 | 0.1 |
| PIN NO | 21 | 22 | | | | | | | | | | | | | | | | | | |
| Voltage | 1.2 | 1.1 | | | | | | | | | | | | | | | | | | |

IC5001 (APA3541-TRL)

| PIN NO | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Voltage | 2.7 | 0 | 2.7 | 0 | 2.7 | 2.7 | 2.7 | 5.7 |

IC502 (TDA8920BTH)

| PIN NO | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Voltage | 1.5 | 0.7 | 2 | 1.5 | 4.6 | 0 | 0 | 4.5 | 0 | 0 | 2.1 | 2.2 | 2.2 | 1.8 | 2.1 | 2.1 | 1.1 | 3.1 | 4.5 | 0.1 |
| PIN NO | 21 | 22 | | | | | | | | | | | | | | | | | | |
| Voltage | 1.2 | 1.1 | | | | | | | | | | | | | | | | | | |

IC503 (TDA8920BTH)

| PIN NO | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Voltage | 1.5 | 0.7 | 2 | 1.5 | 4.6 | 0 | 0 | 4.5 | 0 | 0 | 2.1 | 2.2 | 2.2 | 1.8 | 2.1 | 2.1 | 1.1 | 3.1 | 4.5 | 0.1 |
| PIN NO | 21 | 22 | | | | | | | | | | | | | | | | | | |
| Voltage | 1.2 | 1.1 | | | | | | | | | | | | | | | | | | |

IC504 ( 74HCU04D)

| PIN NO | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Voltage | 4.1 | 0 | 2.6 | 3 | 2.5 | 2.6 | 0 | 0 | 5.7 | 2.6 | 3 | 5.7 | 0 | 5.7 |

IC801 (ES6603S)

| PIN NO | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Voltage | 3.5 | 3.5 | 2.6 | 2.6 | 2.6 | 2.6 | 3.8 | 3.8 | 2.7 | 2.6 | 2.7 | 2.7 | 2.6 | 2.6 | 2.7 | 2.7 | 2.6 | 2.6 | 5.1 | 2.6 |
| PIN NO | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| Voltage | 3.9 | 5.1 | 0.2 | 0.2 | 0 | 3.3 | 0 | 2.6 | 0 | 0 | 0 | 1.5 | 2.4 | 0 | 3.9 | 1.6 | 3.3 | 2 | 1.5 | 1.6 |
| PIN NO | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 |
| Voltage | 1.6 | 2 | 4.2 | 4.2 | 3.3 | 3.3 | 2.7 | 0 | 1.5 | 0 | 0 | 2.5 | 2.5 | 3.5 | 3.5 | 2.5 | 2.4 | 5.1 | 4.3 | 4.3 |
| PIN NO | 61 | 62 | 63 | 64 | | | | | | | | | | | | | | | | |
| Voltage | 3.2 | 3.1 | 0.8 | 3 | | | | | | | | | | | | | | | | |

IC802 (AM5868S)

| PIN NO | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Voltage | 1.5 | 0.7 | 2 | 1.5 | 4.6 | 0 | 0 | 4.5 | 0 | 0 | 2.1 | 2.2 | 2.2 | 1.8 | 2.1 | 2.1 | 1.1 | 3.1 | 4.5 | 0.1 |
| PIN NO | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | | | | | | | | | | |
| Voltage | 0 | 0 | 1.2 | 1.1 | 1.2 | 1.5 | 1.5 | 2 | 0 | 0 | | | | | | | | | | |

Q301 (2SC1623)

| Pin No. | 1 | 2 | 3 |
|---|---|---|---|
| Voltage | 0.6 | 0 | 0 |

Q401 (KTC3875-Y)

| Pin No. | 1 | 2 | 3 |
|---|---|---|---|
| Voltage | 0.6 | 0 | 0 |

Q402 (KTC3875-Y)

| Pin No. | 1 | 2 | 3 |
|---|---|---|---|
| Voltage | 0.6 | 0 | 0 |

Q403 (2SA812)

| Pin No. | 1 | 2 | 3 |
|---|---|---|---|
| Voltage | 0.1 | 0.7 | 0.7 |

Q5001 (2SC1623)

| Pin No. | 1 | 2 | 3 |
|---|---|---|---|
| Voltage | 0.6 | 0 | 0 |

Q5002 (2SC2001L)

| Pin No. | 1 | 2 | 3 |
|---|---|---|---|
| Voltage | 5.6 | 14.4 | 6.2 |

Q5003 (2SC1623)

| Pin No. | 1 | 2 | 3 |
|---|---|---|---|
| Voltage | 0 | 1.9 | 0 |

Q5041 (2SC1623)

| Pin No. | 1 | 2 | 3 |
|---|---|---|---|
| Voltage | 0.6 | 0 | 0 |

Q5042 (2SA812)

| Pin No. | 1 | 2 | 3 |
|---|---|---|---|
| Voltage | 0.6 | 0 | 0 |

Q501 (2SC1623)

| Pin No. | 1 | 2 | 3 |
|---|---|---|---|
| Voltage | 0.6 | 0 | 0 |

Q801 (2SK3018)

| Pin No. | 1 | 2 | 3 |
|---|---|---|---|
| Voltage | 0 | 0 | 0 |

Q802 ( 2SK3018)

| Pin No. | 1 | 2 | 3 |
|---|---|---|---|
| Voltage | 2.3 | 0 | 0 |

Q803 (2SC2812N)

| Pin No. | 1 | 2 | 3 |
|---|---|---|---|
| Voltage | 0 | 2.3 | 0 |

Q804 (2SC2812N)

| Pin No. | 1 | 2 | 3 |
|---|---|---|---|
| Voltage | 0.6 | 0 | 0 |

Q805(2SB1132RT100)

| Pin No. | 1 | 2 | 3 |
|---|---|---|---|
| Voltage | 4.8 | 0 | 4.8 |

Q806(2SB1132RT100)

| Pin No. | 1 | 2 | 3 |
|---|---|---|---|
| Voltage | 3.8 | 2.0 | 0 |

Q811 ( 2SA812)

| Pin No. | 1 | 2 | 3 |
|---|---|---|---|
| Voltage | 0.1 | 0 | 0.8 |

Q951A (2SA952)

| Pin No. | 1 | 2 | 3 |
|---|---|---|---|
| Voltage | 14 | 14 | |

Q952A (2SC1623)

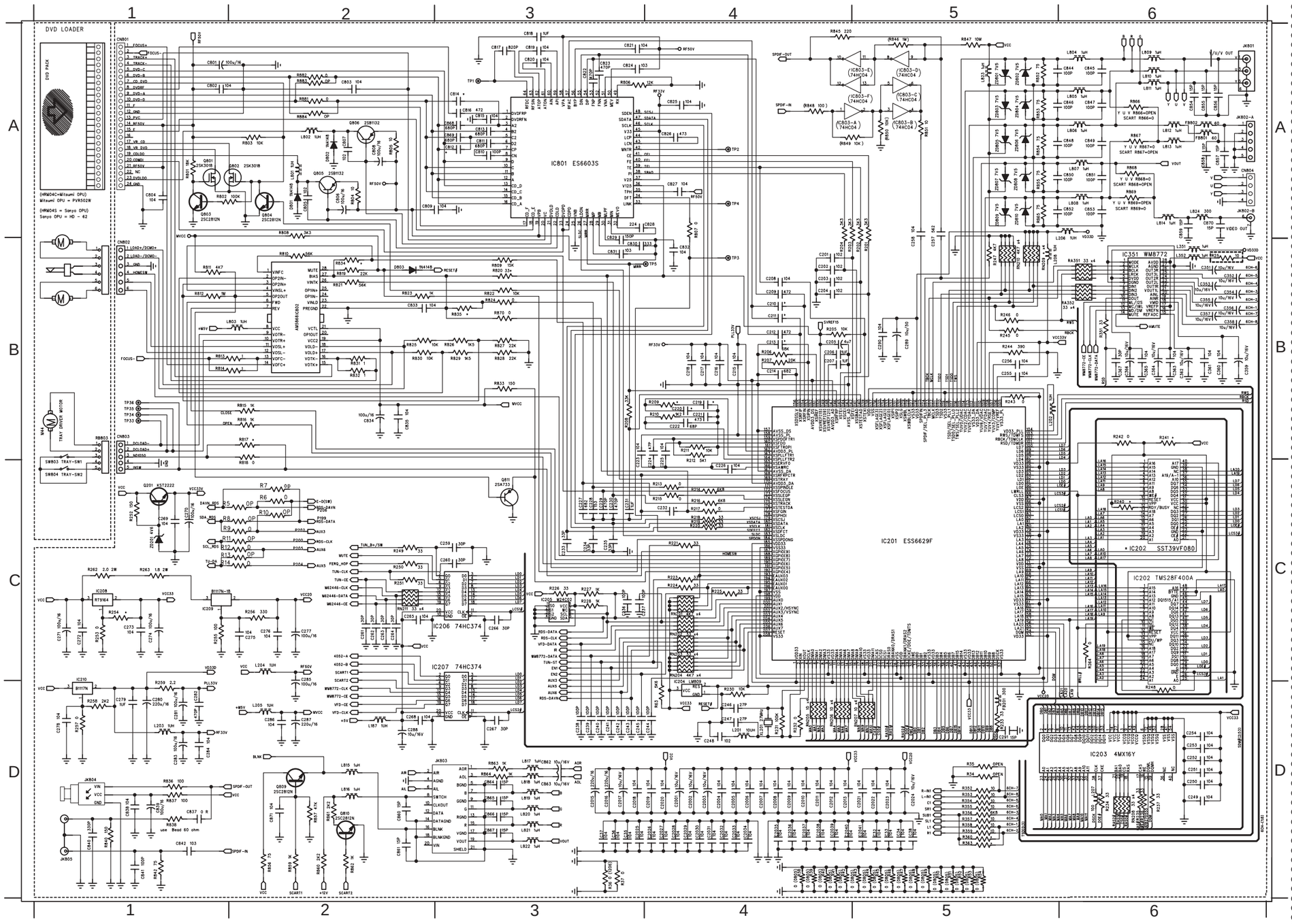
| Pin No. | 1 | 2 | 3 |
|---|---|---|---|
| Voltage | 0.6 | 0 | 0 |

Q953A (TIP42C)

| Pin No. | 1 | 2 | 3 |
|---|---|---|---|
| Voltage | -12 | -24 | -13 |

8-3

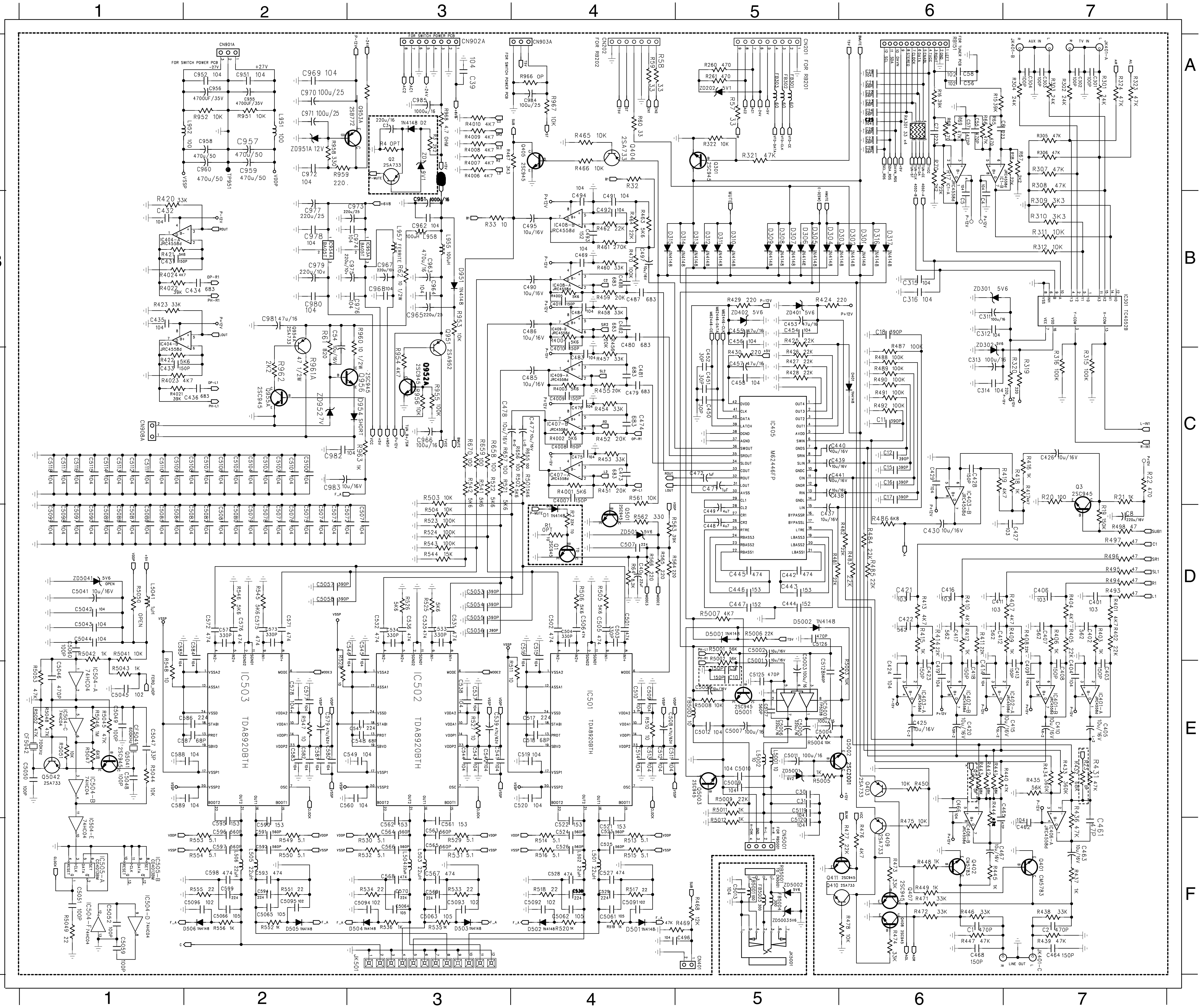
# CIRCUIT DIAGRAM (1)- MAIN BOARD




| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| C2001 | D4 | C267 | D3 | C862 | D3 | R212 | B4 | R824 | B3 |
| C2002 | D4 | C268 | D2 | C863 | D3 | R213 | C4 | R825 | B2 |
| C2003 | D4 | C269 | C1 | C864 | D3 | R214 | C4 | R826 | B3 |
| C2004 | D4 | C270 | C1 | C865 | D3 | R215 | C4 | R827 | B3 |
| C2005 | D4 | C271 | C1 | C866 | D3 | R216 | C4 | R828 | B3 |
| C2006 | D4 | C272 | C1 | C867 | D3 | R217 | C4 | R829 | B3 |
| C2007 | D4 | C273 | C1 | C868 | A3 | R218 | C4 | R830 | B2 |
| C2008 | D4 | C274 | C1 | C869 | A3 | R219 | C4 | R831 | B2 |
| C2009 | D4 | C275 | C2 | C870 | A6 | R220 | C4 | R832 | B2 |
| C201 | B4 | C276 | C2 | C871 | D2 | R221 | C4 | R833 | B3 |
| C2010 | D4 | C277 | C2 | CN801 | A1 | R223 | C4 | R834 | B2 |
| C2011 | D4 | C278 | D1 | CN802 | B1 | R224 | C4 | R835 | B3 |
| C2012 | D4 | C279 | D1 | CN803 | B1 | R225 | C4 | R836 | D1 |
| C2013 | D4 | C280 | D1 | CN804 | A6 | R226 | C3 | R837 | D1 |
| C2015 | D3 | C281 | D1 | D801 | A2 | R227 | C3 | R838 | D1 |
| C2016 | D3 | C282 | D1 | D802 | A2 | R228 | C3 | R840 | D1 |
| C2017 | D3 | C283 | D1 | D803 | B2 | R230 | D4 | R842 | D1 |
| C2018 | D3 | C284 | D1 | FB201 | D5 | R231 | D4 | R845 | A5 |
| C2019 | D4 | C285 | D2 | FB801 | A6 | R232 | D4 | R846 | A5 |
| C202 | B4 | C286 | D2 | FB802 | A6 | R233 | D5 | R847 | A5 |
| C2020 | D4 | C287 | D2 | IC201 | C5 | R234 | D6 | R848 | A5 |
| C2021 | D5 | C288 | D2 | IC202 | C6 | R235 | D6 | R849 | A5 |
| C2022 | D5 | C289 | B5 | IC202 | C6 | R236 | D6 | R850 | A5 |
| C2023 | D5 | C290 | B5 | IC203 | D6 | R237 | D6 | R851 | A5 |
| C2024 | D5 | C291 | D5 | IC204 | D4 | R240 | C6 | R852 | A5 |
| C2025 | D3 | C32 | D5 | IC205 | C3 | R241 | B6 | R853 | A5 |
| C2026 | D4 | C33 | D5 | IC206 | C3 | R242 | B6 | R854 | A5 |
| C2027 | D4 | C34 | D5 | IC207 | C3 | R243 | B5 | R855 | A5 |
| C2028 | D4 | C35 | D3 | IC208 | C1 | R244 | B5 | R856 | D2 |
| C2029 | D4 | C351 | B6 | IC209 | C1 | R245 | B5 | R857 | D2 |
| C203 | B4 | C352 | B6 | IC210 | D1 | R246 | B5 | R859 | D2 |
| C2030 | D4 | C353 | B6 | IC351 | B6 | R247 | B5 | R860 | D2 |
| C2031 | D4 | C354 | B6 | IC801 | A3 | R249 | C2 | R861 | D2 |
| C2032 | D4 | C355 | B6 | IC802 | B2 | R25 | B6 | R862 | D2 |
| C2033 | D4 | C356 | B6 | IC803-A | A4 | R250 | C2 | R863 | D3 |
| C2034 | D4 | C357 | B6 | IC803-B | A4 | R251 | C2 | R864 | D3 |
| C2035 | D4 | C358 | B6 | IC803-C | A5 | R252 | C1 | R865 | A5 |
| C2036 | D4 | C359 | B6 | IC803-D | A5 | R253 | C1 | R866 | A6 |
| C2037 | D4 | C36 | D3 | IC803-E | A5 | R254 | C1 | R867 | A6 |
| C2038 | D4 | C360 | B6 | IC803-F | A5 | R255 | C1 | R868 | A6 |
| C2039 | D4 | C361 | B6 | JK801 | A6 | R256 | C2 | R869 | A6 |
| C204 | B4 | C362 | B6 | JK802-A | A6 | R257 | D1 | R870 | B3 |
| C2040 | D4 | C363 | B6 | JK802-B | A6 | R258 | D1 | R881 | A2 |
| C2041 | D5 | C364 | B6 | JK803 | D3 | R259 | D1 | R882 | A2 |
| C205 | B4 | C365 | B6 | JK804 | D1 | R262 | C1 | R883 | A2 |
| C206 | B4 | C366 | B6 | JK805 | D1 | R263 | C1 | R884 | A2 |
| C207 | B4 | C367 | B6 | L187 | D2 | R264 | C6 | R9 | C2 |
| C208 | B4 | C37 | D3 | L201 | D4 | R34 | D5 | RA351 | B6 |
| C209 | B4 | C38 | D5 | L202 | B5 | R35 | D5 | RA352 | B6 |
| C210 | B4 | C801 | A1 | L203 | D1 | R351 | B6 | RN201 | C4 |
| C211 | B4 | C802 | A1 | L204 | C2 | R352 | D5 | RN202 | C4 |
| C212 | B4 | C803 | A2 | L205 | D2 | R353 | D5 | RN203 | C4 |
| C213 | B4 | C804 | A1 | L206 | A6 | R354 | D5 | RN204 | C4 |
| C214 | B4 | C805 | A2 | L207 | D6 | R355 | D5 | RN205 | D4 |
| C215 | B4 | C806 | A2 | L208 | B5 | R356 | D5 | RN206 | D4 |
| C216 | B4 | C807 | A2 | L351 | B6 | R357 | D5 | RN207 | D5 |
| C217 | B4 | C808 | A2 | L352 | B6 | R358 | D5 | RN208 | D6 |
| C218 | B4 | C809 | A3 | L801 | A2 | R359 | D5 | RN209 | B5 |
| C219 | B4 | C810 | A3 | L802 | A2 | R36 | D3 | RN210 | B5 |
| C220 | B4 | C811 | A3 | L803 | B2 | R360 | D5 | RN211 | C2 |
| C221 | B4 | C812 | A3 | L804 | A6 | R363 | D5 | SW803 | B1 |
| C222 | B4 | C813 | A3 | L805 | A6 | R37 | D3 | SW804 | C1 |
| C223 | B3 | C814 | A3 | L806 | A6 | R38 | D4 | XL201 | D4 |
| C224 | B4 | C815 | A3 | L807 | A6 | R39 | D4 | ZD201 | C1 |
| C225 | B4 | C816 | A3 | L808 | A6 | R40 | D4 | ZD801 | A5 |
| C226 | C4 | C817 | A3 | L809 | A6 | R41 | D4 | ZD802 | A5 |
| C227 | C3 | C818 | A3 | L810 | A6 | R42 | D4 | ZD803 | A5 |
| C228 | C3 | C819 | A3 | L811 | A6 | R43 | D5 | ZD804 | A5 |
| C229 | C3 | C820 | A3 | L812 | A6 | R44 | D5 | ZD805 | A5 |
| C230 | C3 | C821 | A3 | L813 | A6 | R45 | D5 | ZD806 | A5 |
| C231 | C3 | C822 | A3 | L814 | A6 | R46 | D5 | ZD807 | A5 |
| C232 | C4 | C823 | A3 | L815 | D2 | R47 | D5 | ZD808 | A5 |
| C233 | C3 | C824 | A3 | L816 | D2 | R48 | D5 | ZD809 | A5 |
| C234 | C3 | C825 | A4 | L817 | D3 | R49 | D5 | ZD810 | A5 |
| C235 | C3 | C826 | A4 | L818 | D3 | R5 | C2 | | |
| C236 | C3 | C827 | A4 | L819 | D3 | R50 | D5 | | |
| C237 | C3 | C828 | A3 | L820 | D3 | R51 | D5 | | |
| C238 | D3 | C829 | B3 | L821 | D3 | R52 | D5 | | |
| C239 | D3 | C830 | B3 | L822 | D3 | R53 | D5 | | |
| C240 | D3 | C831 | B3 | L824 | A6 | R54 | D5 | | |
| C241 | D3 | C832 | B4 | L825 | A5 | R6 | C2 | | |
| C242 | D3 | C833 | B2 | Q201 | C1 | R63 | D4 | | |
| C243 | D3 | C834 | B2 | Q801 | A1 | R7 | C2 | | |
| C244 | D4 | C835 | B2 | Q802 | A2 | R8 | C2 | | |
| C245 | D3 | C837 | D1 | Q803 | A1 | R801 | A1 | | |
| C246 | D4 | C838 | D1 | Q804 | A2 | R802 | A1 | | |
| C247 | D4 | C839 | D1 | Q805 | A2 | R803 | A2 | | |
| C248 | D4 | C840 | D1 | Q806 | A2 | R803 | B3 | | |
| C249 | D6 | C841 | D1 | Q809 | D2 | R803 | B1 | | |
| C250 | D6 | C842 | D1 | Q809 | D2 | R804 | A2 | | |
| C251 | D6 | C844 | A6 | Q810 | D2 | R805 | A2 | | |
| C252 | D6 | C845 | A6 | Q811 | C3 | R805 | A3 | | |
| C253 | D6 | C846 | A6 | R10 | C2 | R807 | A5 | | |
| C254 | D6 | C847 | A6 | R11 | C2 | R808 | A2 | | |
| C255 | B5 | C848 | A6 | R12 | C2 | R810 | B2 | | |
| C256 | B5 | C849 | A6 | R13 | C2 | R811 | B1 | | |
| C257 | A4 | C850 | A6 | R14 | C2 | R812 | B1 | | |
| C257 | B5 | C851 | A6 | R201 | B5 | R813 | B2 | | |
| C258 | A4 | C852 | A6 | R202 | B5 | R814 | B2 | | |
| C258 | B5 | C853 | A6 | R203 | B4 | R815 | B2 | | |
| C259 | C3 | C854 | A6 | R204 | B4 | R816 | B2 | | |
| C260 | C3 | C855 | A6 | R205 | B4 | R817 | B2 | | |
| C261 | C2 | C856 | A6 | R206 | B4 | R818 | B2 | | |
| C262 | C2 | C857 | A6 | R207 | B4 | R819 | B2 | | |
| C263 | C2 | C858 | A6 | R208 | B3 | R820 | B3 | | |
| C264 | C2 | C859 | A6 | R209 | B4 | R821 | B2 | | |
| C265 | C2 | C860 | D2 | R210 | B4 | R822 | B3 | | |
| C266 | C3 | C861 | D2 | R211 | B4 | R823 | B2 | | |

8-4

# CIRCUIT DIAGRAM ( 2) - MAIN BOARD



| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C1 | F6 | C475 | C4 | C5112 | C1 | C966 | C3 | L952 | A2 | R436 | F7 | R528 | E2 |
| C10 | E5 | C476 | C4 | C5113 | C1 | C967 | B3 | L955 | B3 | R437 | F7 | R529 | F3 |
| C11 | C6 | C477 | C4 | C5114 | C1 | C968 | B3 | L957 | B3 | R438 | F7 | R530 | F3 |
| C12 | C6 | C478 | C3 | C5115 | C1 | C969 | A2 | L958 | B3 | R439 | F7 | R531 | F3 |
| C15 | C6 | C479 | C4 | C5116 | C1 | C970 | A2 | Q1 | D4 | R440 | E6 | R532 | F3 |
| C16 | C6 | C480 | B4 | C5117 | C1 | C971 | A2 | Q2 | A3 | R441 | E6 | R533 | F3 |
| C17 | C6 | C481 | C4 | C5118 | C1 | C972 | A2 | Q3 | C7 | R442 | E6 | R534 | F3 |
| C18 | B6 | C482 | B4 | C5119 | E5 | C973 | B3 | Q301 | A5 | R443 | E6 | R535 | F3 |
| C2 | F7 | C483 | C4 | C5120 | F5 | C974 | B3 | Q401 | F7 | R444 | E6 | R536 | F3 |
| C21 | A6 | C484 | B4 | C5125 | E5 | C975 | B3 | Q402 | F6 | R445 | F6 | R541 | C3 |
| C22 | A6 | C485 | C4 | C5126 | D5 | C976 | B3 | Q403 | E6 | R446 | F6 | R542 | C3 |
| C23 | A6 | C486 | B4 | C5126 | E4 | C977 | B2 | Q404 | A4 | R447 | F6 | R543 | D3 |
| C24 | A6 | C487 | B4 | C5127 | E5 | C978 | B2 | Q405 | A4 | R448 | F6 | R544 | D3 |
| C25 | A6 | C488 | B4 | C5128 | E5 | C979 | B2 | Q407 | F6 | R449 | F6 | R545 | D2 |
| C26 | A6 | C490 | B4 | C513 | E4 | C980 | B2 | Q408 | F6 | R450 | E6 | R546 | D2 |
| C27 | A6 | C491 | B4 | C514 | E4 | C981 | B2 | Q410 | F6 | R451 | C4 | R547 | E2 |
| C28 | A6 | C492 | B4 | C515 | D4 | C982 | C2 | Q411 | F6 | R452 | C4 | R549 | F2 |
| C29 | A6 | C494 | B4 | C516 | D4 | C983 | C2 | Q5001 | E5 | R453 | C4 | R550 | F2 |
| C30 | E5 | C495 | B4 | C517 | E4 | C984 | A4 | Q5002 | E6 | R454 | C4 | R551 | F2 |
| C301 | A7 | C496 | F5 | C517 | F4 | C985 | A3 | Q5003 | E5 | R455 | C4 | R552 | F2 |
| C302 | A7 | C5 | B6 | C518 | E4 | CF5041 | E1 | Q501 | D4 | R457 | C4 | R553 | F2 |
| C303 | A7 | C5001 | E5 | C519 | E4 | CF5042 | E1 | Q5041 | E1 | R458 | B4 | R554 | F2 |
| C304 | A7 | C5002 | D5 | C520 | E4 | CN201 | A5 | Q5042 | E1 | R459 | B4 | R555 | F2 |
| C31 | E5 | C5003 | E5 | C521 | F4 | CN202 | A4 | Q951 | B3 | R460 | B4 | R556 | F2 |
| C311 | B6 | C5004 | E5 | C523 | F4 | CN401 | F5 | Q952A | C3 | R461 | B4 | R561 | C4 |
| C312 | B6 | C5005 | E5 | C524 | F4 | CN5001 | F5 | Q953A | A3 | R463 | B4 | R562 | D4 |
| C313 | C6 | C5006 | E5 | C525 | F4 | CN901A | A2 | Q954A | B2 | R464 | B4 | R565 | D4 |
| C314 | C6 | C5007 | E5 | C526 | F4 | CN902A | A3 | Q955A | C2 | R465 | A4 | R566 | D4 |
| C315 | B6 | C5008 | E5 | C527 | F4 | CN903A | A4 | Q956 | C3 | R466 | A4 | R57 | A5 |
| C316 | B6 | C5009 | E5 | C528 | F4 | CN908A | C1 | QR960 | B3 | R467 | A4 | R58 | A4 |
| C39 | A3 | C501 | D4 | C529 | F4 | D1 | D4 | R1 | D4 | R468 | F5 | R59 | A4 |
| C39 | A3 | C5010 | E5 | C530 | F4 | D2 | A3 | R15 | A6 | R469 | F5 | R60 | A4 |
| C4 | B6 | C5010 | E5 | C531 | D3 | D301 | B6 | R16 | A6 | R470 | B4 | R61 | B2 |
| C40 | D4 | C5011 | E5 | C532 | D3 | D302 | B6 | R17 | A6 | R471 | F6 | R62 | B3 |
| C4007 | C4 | C5012 | E5 | C533 | D3 | D303 | B6 | R18 | A7 | R472 | F6 | R64 | D4 |
| C4008 | C4 | C502 | D4 | C534 | D3 | D304 | B5 | R19 | D7 | R473 | F6 | R655 | C4 |
| C4009 | C4 | C503 | D4 | C535 | D3 | D305 | B5 | R2 | D4 | R474 | F6 | R656 | C4 |
| C401 | D7 | C504 | D4 | C536 | D3 | D306 | B5 | R20 | C7 | R475 | F6 | R657 | C3 |
| C4010 | B4 | C5041 | D1 | C537 | E3 | D307 | B5 | R21 | C7 | R476 | F6 | R658 | C3 |
| C4011 | B4 | C5042 | D1 | C538 | E3 | D308 | B5 | R22 | C7 | R477 | F6 | R659 | C3 |
| C402 | D7 | C5043 | D1 | C539 | E3 | D309 | B5 | R23 | E7 | R478 | F6 | R670 | C3 |
| C403 | E7 | C5044 | D1 | C54 | B2 | D310 | B5 | R24 | E6 | R481 | D5 | R68 | A6 |
| C404 | E7 | C5045 | E1 | C541 | E3 | D311 | B5 | R260 | A5 | R484 | D6 | R68 | A7 |
| C405 | E7 | C5046 | E1 | C542 | E3 | D312 | B5 | R261 | A5 | R485 | D6 | R69 | A6 |
| C406 | D7 | C5047 | E1 | C543 | E3 | D313 | B5 | R3 | A3 | R486 | D6 | R70 | A6 |
| C407 | D7 | C5048 | E1 | C544 | E3 | D314 | B5 | R301 | A7 | R487 | C6 | R951 | A2 |
| C408 | E7 | C5049 | E1 | C545 | D3 | D315 | B4 | R302 | A7 | R488 | C6 | R952 | A2 |
| C409 | E7 | C505 | D4 | C546 | D3 | D316 | B6 | R303 | A7 | R489 | C6 | R953 | B3 |
| C410 | E7 | C5050 | D3 | C547 | E3 | D317 | B6 | R304 | A7 | R490 | C6 | R954 | C3 |
| C411 | D6 | C5050 | E1 | C548 | E3 | D5001 | D5 | R305 | A7 | R491 | C6 | R955 | C3 |
| C412 | D6 | C5051 | F1 | C549 | E3 | D5002 | D5 | R306 | A7 | R492 | C6 | R956 | C3 |
| C413 | E7 | C5052 | F1 | C55 | A6 | D501 | F4 | R307 | A7 | R493 | D7 | R957 | A3 |
| C414 | E6 | C5053 | D3 | C56 | A6 | D502 | F4 | R308 | A7 | R494 | D7 | R958 | A2 |
| C415 | E6 | C5054 | D3 | C560 | E3 | D503 | F3 | R309 | B7 | R495 | D7 | R959 | A2 |
| C416 | D6 | C5055 | D3 | C561 | F3 | D504 | F3 | R310 | B7 | R496 | B4 | R961A | C2 |
| C417 | D6 | C5057 | D2 | C562 | F3 | D505 | F2 | R311 | B7 | R496 | D7 | R962 | C2 |
| C418 | E6 | C5058 | D2 | C563 | F3 | D506 | F2 | R312 | B7 | R497 | B4 | R963 | C3 |
| C419 | E6 | C5059 | F1 | C565 | F3 | D951 | B3 | R315 | C7 | R497 | D7 | R966 | A4 |
| C420 | E6 | C506 | D4 | C566 | F3 | D954 | C3 | R316 | C7 | R498 | D7 | R967 | A4 |
| C421 | D6 | C5060 | D1 | C566 | F3 | FB301 | A5 | R319 | C7 | R4D06 | A3 | R968 | A3 |
| C422 | D6 | C5061 | F4 | C567 | F3 | FB302 | A5 | R32 | A4 | R4D07 | A3 | RA301 | A6 |
| C423 | E6 | C5062 | F4 | C569 | F3 | FB303 | A5 | R320 | C7 | R4D08 | A3 | RB151 | A6 |
| C424 | E6 | C5063 | F3 | C57 | A6 | FB5003 | E5 | R321 | A5 | R4D09 | A3 | RB5001 | F5 |
| C425 | E6 | C5064 | F3 | C570 | F3 | IC1-A | A6 | R322 | A5 | R4D10 | A3 | SSSS | B3 |
| C426 | C7 | C5065 | F2 | C571 | D2 | IC1-B | A6 | R323 | A7 | R5001 | D5 | ZD1 | A3 |
| C427 | D7 | C5066 | F2 | C572 | D2 | IC301 | B7 | R324 | A7 | R5002 | E5 | ZD202 | A5 |
| C428 | C6 | C507 | D4 | C573 | D2 | IC401-A | E7 | R33 | B3 | R5003 | E6 | ZD301 | B6 |
| C429 | C6 | C5071 | D3 | C574 | D2 | IC401-B | E7 | R4 | A3 | R5004 | E5 | ZD302 | C6 |
| C430 | D6 | C5072 | D3 | C575 | D2 | IC402-A | E6 | R4001 | C4 | R5005 | E5 | ZD401 | B5 |
| C431 | B1 | C5073 | D2 | C576 | D2 | IC402-B | E6 | R4002 | C4 | R5006 | D5 | ZD402 | B5 |
| C432 | B1 | C5074 | D2 | C577 | E2 | IC403-A | E6 | R4003 | C4 | R5007 | D5 | ZD5001 | E5 |
| C433 | C1 | C5075 | D2 | C578 | E2 | IC403-B | C6 | R4004 | B4 | R5008 | E5 | ZD5002 | F5 |
| C434 | B2 | C5076 | D2 | C579 | E2 | IC404-A | B1 | R4005 | B4 | R5009 | E5 | ZD5003 | F5 |
| C435 | B1 | C5077 | D2 | C58 | A6 | IC404-B | B1 | R401 | D7 | R501 | C4 | ZD501 | D4 |
| C436 | C2 | C5078 | D2 | C580 | E2 | IC405 | C5 | R402 | D7 | R5011 | E5 | ZD5041 | D1 |
| C437 | D5 | C5079 | D2 | C581 | E2 | IC406-A | F7 | R4021 | C1 | R5012 | F5 | ZD951A | A2 |
| C438 | C5 | C508 | E4 | C582 | E2 | IC406-B | F6 | R4022 | B1 | R502 | C4 | ZD952 | C2 |
| C439 | C5 | C5080 | D2 | C583 | E2 | IC407-A | C4 | R4023 | C1 | R503 | C3 | | |
| C440 | C5 | C5081 | D2 | C584 | D2 | IC407-B | C4 | R4024 | B1 | R503 | D4 | | |
| C441 | C5 | C5082 | D2 | C585 | D2 | IC408-A | B4 | R403 | D7 | R504 | D4 | | |
| C442 | D5 | C5083 | D2 | C586 | E2 | IC408-B | B4 | R404 | D7 | R504 | D3 | | |
| C443 | D5 | C5084 | D1 | C587 | E2 | IC409-A | C4 | R405 | D7 | R5041 | D1 | | |
| C444 | D5 | C5085 | D1 | C588 | E2 | IC409-B | B4 | R406 | D7 | R5042 | D1 | | |
| C445 | D5 | C5086 | D1 | C589 | E2 | IC5001 | E5 | R407 | D7 | R5043 | E1 | | |
| C446 | D5 | C5087 | D1 | C590 | F2 | IC501 | E4 | R408 | D7 | R5044 | E1 | | |
| C447 | D5 | C5088 | D1 | C591 | F2 | IC502 | E3 | R409 | D7 | R5045 | E1 | | |
| C448 | D5 | C5089 | D1 | C592 | F2 | IC503 | E2 | R410 | D6 | R5046 | E1 | | |
| C449 | D5 | C509 | E4 | C593 | F2 | IC504-A | E1 | R411 | D6 | R5047 | E1 | | |
| C450 | C5 | C5090 | D1 | C594 | F2 | IC504-B | E1 | R412 | D6 | R5048 | E1 | | |
| C451 | C5 | C5091 | F4 | C595 | F2 | IC504-C | E1 | R413 | D6 | R5049 | F1 | | |
| C452 | C5 | C5092 | F4 | C596 | F2 | IC504-D | F1 | R414 | D6 | R505 | D4 | | |
| C453 | B5 | C5093 | F3 | C597 | F2 | IC504-E | F1 | R415 | D6 | R5050 | D1 | | |
| C454 | B5 | C5094 | F3 | C598 | F2 | IC504-F | F1 | R416 | C7 | R5051 | E1 | | |
| C455 | B5 | C5095 | F2 | C599 | F2 | IC505-A | F1 | R417 | C7 | R5052 | E1 | | |
| C456 | B5 | C5096 | F2 | C6 | A6 | IC505-B | F1 | R418 | C7 | R5053 | E1 | | |
| C457 | C5 | C5097 | D1 | C65 | A6 | IC953A | B3 | R419 | C6 | R506 | D4 | | |
| C458 | C5 | C5098 | D1 | C66 | A6 | IC954A | B2 | R420 | B1 | R510 | E4 | | |
| C461 | F7 | C5099 | D1 | C7 | A6 | JK401-A | A7 | R421 | B1 | R511 | E4 | | |
| C462 | B4 | C510 | E4 | C8 | D7 | JK401-B | A7 | R422 | C1 | R513 | F4 | | |
| C462 | F7 | C5100 | C2 | C9 | E5 | JK401-C | F7 | R423 | B1 | R514 | F4 | | |
| C463 | F7 | C5101 | C2 | C951 | A2 | JK5001 | F5 | R424 | B5 | R515 | F4 | | |
| C464 | F7 | C5102 | C2 | C952 | A2 | JK501 | F3 | R425 | B5 | R516 | F4 | | |
| C464 | F3 | C5103 | C2 | C955 | A2 | L5001 | E5 | R426 | C5 | R518 | F4 | | |
| C465 | E6 | C5104 | C2 | C956 | A2 | L5002 | E5 | R427 | C5 | R519 | F4 | | |
| C466 | E6 | C5105 | C2 | C957 | A2 | L501 | F4 | R428 | C5 | R520 | F4 | | |
| C467 | F6 | C5106 | C2 | C958 | A2 | L502 | F4 | R429 | B5 | R521 | C3 | | |
| C468 | F6 | C5107 | C2 | C959 | A2 | L503 | F3 | R430 | C5 | R522 | C3 | | |
| C469 | B4 | C5108 | C2 | C960 | A2 | L504 | F3 | R431 | E7 | R523 | D3 | | |
| C471 | C5 | C5109 | C1 | C961 | B3 | L5041 | D1 | R432 | E7 | R524 | D3 | | |
| C472 | C5 | C511 | E4 | C962 | B3 | L505 | F2 | R433 | E7 | R525 | D3 | | |
| C473 | C4 | C5110 | C1 | C963 | B3 | L506 | F2 | R434 | E7 | R526 | D3 | | |
| C474 | C4 | C5111 | C1 | C965 | B3 | L951 | A2 | R435 | E7 | R527 | E3 | | |

8-5

# PCB LAYOUT - MAIN BOARD (TOP)

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| C10 | B3 |
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| C12 | C3 |
| C15 | C3 |
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| C19 | C4 |
| C20 | B4 |
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| C2003 | C2 |
| C201 | B1 |
| C2015 | C1 |
| C2016 | B1 |
| C2017 | C2 |
| C2019 | B1 |
| C202 | B1 |
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| C2024 | B2 |
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| C584 | A5 |
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| C807 | A1 |
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| C835 | A1 |
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| C869 | A1 |
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| C985 | A4 |
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| CN202 | A3 |
| CN401 | C4 |
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| CN802 | A1 |
| CN803 | A2 |
| CN804 | D1 |
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| CN902A | A4 |
| CN903A | A3 |
| CN908A | D4 |
| D3 | C4 |
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| D307 | A2 |
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| D310 | C2 |
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| D312 | A3 |
| D313 | A3 |
| D314 | A3 |
| D315 | A3 |
| D316 | A2 |
| D317 | A2 |
| D4 | C4 |
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| D5002 | B2 |
| D801 | A1 |
| D802 | A1 |
| D803 | A2 |
| D954 | D4 |
| FB301 | A2 |
| FB302 | A2 |
| FB303 | A2 |
| FB5003 | B2 |
| FB5004 | C6 |
| FB5004 | D6 |
| G1 | B5 |
| IC1 | D2 |
| IC201 | B2 |
| IC202 | C1 |
| IC203 | C2 |
| IC204 | B2 |
| IC205 | B2 |
| IC206 | C2 |
| IC207 | C2 |
| IC208 | A2 |
| IC209 | A2 |
| IC210 | B1 |
| IC301 | D2 |
| IC351 | C1 |
| IC401 | D3 |
| IC402 | C3 |
| IC402 | C3 |
| IC403 | C3 |
| IC404 | C3 |
| IC405 | B3 |
| IC406 | C3 |
| IC407 | C4 |
| IC408 | C4 |
| IC409 | C4 |
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| IC501 | C5 |
| IC502 | B5 |
| IC503 | A5 |
| IC801 | B1 |
| IC802 | A2 |
| IC803 | C1 |
| IC953A | A3 |
| IC954A | A3 |
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| JK5001 | D6 |
| JK5001 | D5 |
| JK5002 | D6 |
| JK501 | D4 |
| JK502 | D4 |
| JK801 | D1 |
| JK803 | D1 |
| JK804 | D2 |
| JK805 | D3 |
| JK806 | C6 |
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| L204 | A1 |
| L205 | A1 |
| L351 | C1 |
| L352 | D1 |
| L5001 | A2 |
| L5002 | A3 |
| L501 | C5 |
| L502 | D5 |
| L503 | B5 |
| L504 | C5 |
| L505 | A5 |
| L506 | A5 |
| L801 | A1 |
| L802 | A1 |
| L815 | D1 |
| L816 | D1 |
| L817 | D1 |
| L818 | D1 |
| L823 | D1 |
| L951 | B4 |
| L952 | B4 |
| L955 | B4 |
| L956 | B4 |
| L957 | A4 |
| L958 | A3 |
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| MP5001 | D5 |
| MP5002 | C6 |
| MP5002 | D6 |
| Q1 | D5 |
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| Q301 | A3 |
| Q4 | C4 |
| Q401 | D3 |
| Q402 | D3 |
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| Q404 | C4 |
| Q405 | C4 |
| Q407 | D3 |
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| Q5 | C4 |
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| Q5002 | C2 |
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| R63 | A2 |
| R63 | A2 |
| R655 | C4 |
| R656 | C4 |
| R657 | C4 |
| R658 | B4 |
| R659 | C4 |
| R66 | D2 |
| R67 | D2 |
| R670 | C4 |
| R68 | D3 |
| R69 | D3 |
| R7 | A2 |
| R70 | D2 |
| R8 | A2 |
| R801 | A1 |
| R802 | A1 |
| R803 | A1 |
| R804 | A1 |
| R806 | B1 |
| R807 | A1 |
| R808 | A2 |
| R809 | A2 |
| R810 | A2 |
| R811 | A1 |
| R812 | A1 |
| R813 | A1 |
| R814 | A1 |
| R815 | A1 |
| R816 | B1 |
| R817 | A2 |
| R818 | A2 |
| R819 | A2 |
| R820 | A1 |
| R821 | A2 |
| R822 | B1 |
| R823 | A2 |
| R824 | A1 |
| R825 | A1 |
| R826 | A1 |
| R827 | A1 |
| R828 | A2 |
| R829 | A2 |
| R830 | A2 |
| R831 | A1 |
| R832 | A1 |
| R834 | A1 |
| R835 | A1 |
| R836 | D2 |
| R837 | D2 |
| R838 | D3 |
| R840 | D3 |
| R842 | D3 |
| R845 | C1 |
| R846 | C1 |
| R847 | C1 |
| R848 | D2 |
| R849 | C1 |
| R85 | D2 |
| R850 | C1 |
| R851 | B1 |
| R852 | D1 |
| R853 | D1 |
| R854 | D1 |
| R855 | D1 |
| R856 | D2 |
| R857 | D2 |
| R859 | D2 |
| R860 | D2 |
| R861 | D2 |
| R862 | D2 |
| R863 | D1 |
| R864 | D1 |
| R865 | D1 |
| R881 | A1 |
| R882 | A1 |
| R883 | A1 |
| R884 | A1 |
| R9 | A2 |
| R951 | A4 |
| R952 | A4 |
| R953 | A3 |
| R954 | B3 |
| R955 | B3 |
| R956 | B3 |
| R957 | A4 |
| R960 | D4 |
| R961A | D4 |
| R962 | C4 |
| R963 | D4 |
| R965 | D4 |
| R968 | A4 |
| RA301 | A2 |
| RA351 | C1 |
| RA352 | C1 |
| RB151 | A2 |
| RB151 | A2 |
| RB5001 | D6 |
| RB5001 | D5 |
| RB5002 | D6 |
| RB5002 | D6 |
| RB804 | C6 |
| RN201 | B2 |
| RN202 | B2 |
| RN203 | B2 |
| RN204 | B2 |
| RN205 | B2 |
| RN206 | B2 |
| RN207 | B2 |
| RN208 | B2 |
| RN209 | C1 |
| RN210 | C1 |
| RN211 | C2 |
| SW801 | D2 |
| XL201 | B2 |
| ZD201 | C1 |
| ZD202 | A4 |
| ZD301 | D2 |
| ZD302 | D2 |
| ZD401 | B3 |
| ZD402 | B3 |
| ZD5001 | C3 |
| ZD5002 | D6 |
| ZD5002 | D5 |
| ZD5003 | D6 |
| ZD5003 | D5 |
| ZD5004 | C6 |
| ZD5004 | D6 |
| ZD5005 | C6 |
| ZD5005 | D6 |
| ZD501 | D5 |
| ZD5041 | A4 |
| ZD801 | D1 |
| ZD802 | D1 |
| ZD803 | D1 |
| ZD804 | D1 |
| ZD805 | D1 |
| ZD806 | D1 |
| ZD807 | D1 |
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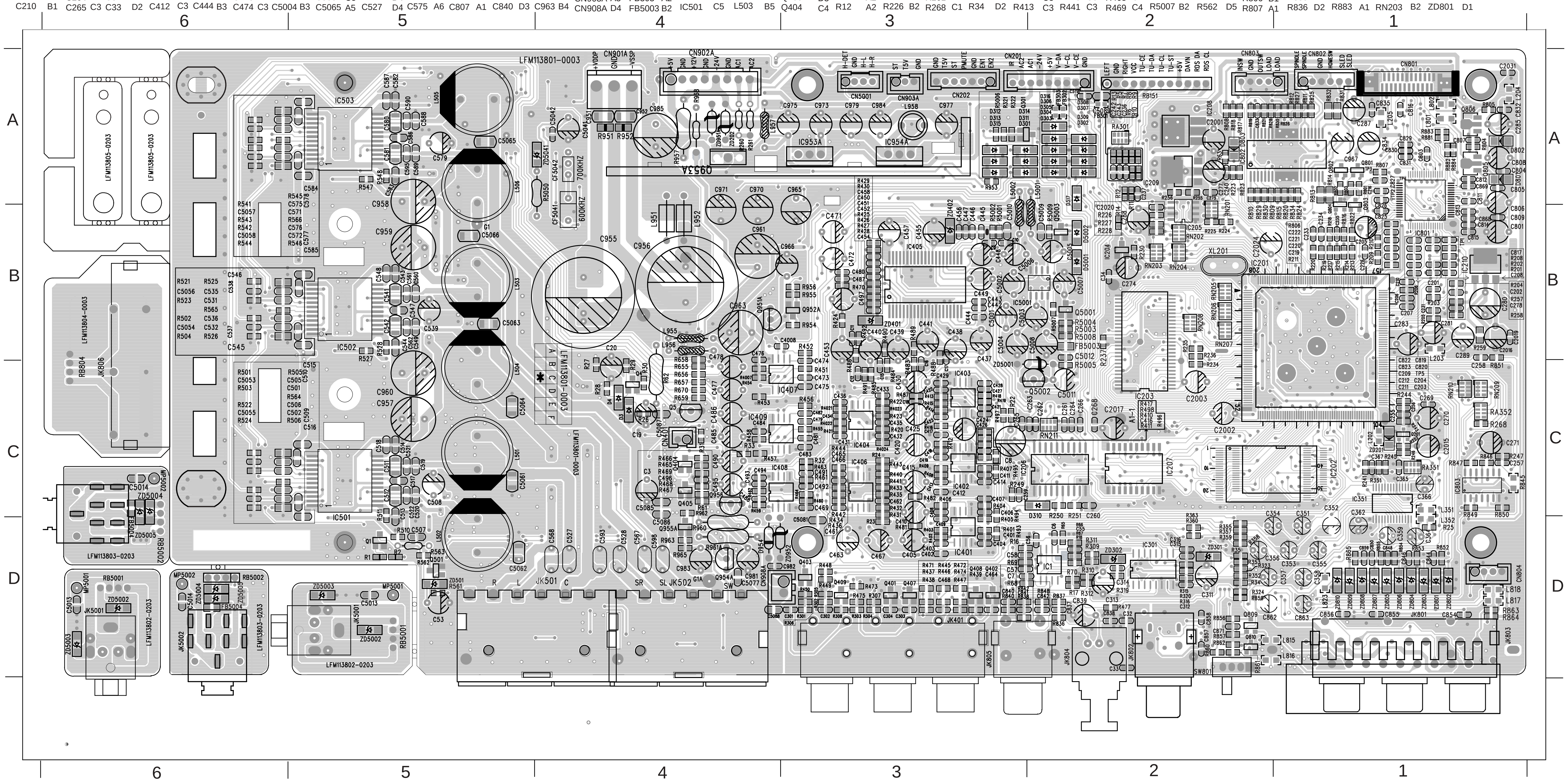
| ZD952 | D3 |



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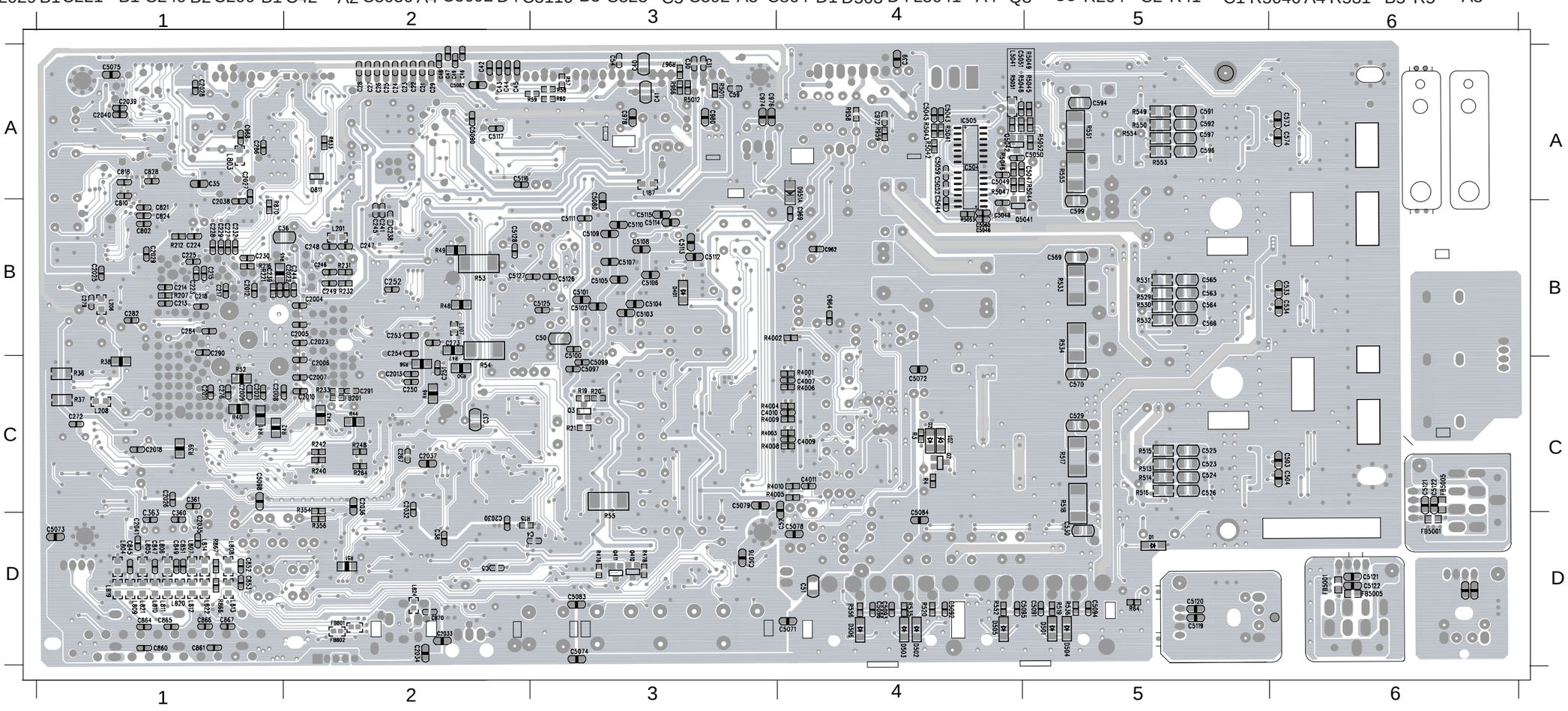
# PCB LAYOUT - MAIN BOARD (BOTTOM)

C2004 B2 C2030 D2 C223 B1 C25 A2 C291 C2 C43 A2 C5051 A4 C5093 D4 C5111 B3 C524 C5 C594 A5 C865 D1 D504 D5 L803 A1 Q410 D3 R3 C4 R42 C1 R5047 A4 R532 B5 R60 A3
C2005 B2 C2032 C2 C224 B1 C250 C2 C30 A3 C44 A2 C5052 A4 C5094 D5 C5112 B3 C525 C5 C596 A5 C866 D1 D505 D4 L804 D1 Q411 D3 R354 C2 R43 C2 R5048 A4 R533 B5 R64 D5
C2006 C2 C2033 D2 C225 B1 C251 C2 C31 A3 C45 A2 C5059 A4 C5095 D4 C5113 B3 C526 C5 C597 A5 C867 D1 D506 D4 L805 D1 Q5041 B4 R356 D2 R44 C2 R5049 A5 R534 B5 R833 A2
C2007 C2 C2034 D2 C227 B1 C252 B2 C35 A1 C46 A2 C5060 B4 C5096 D4 C5114 B3 C529 C5 C599 B5 C870 D2 D951A A4 L806 D1 Q5042 A4 R36 C1 R45 B1 R5051 A4 R535 D4 R866 D1
C2008 C1 C2035 D1 C228 B1 C253 B2 C36 B2 C47 A2 C5071 D4 C5097 C3 C5115 B3 C530 D5 C802 B1 C962 B4 FB201 C2 L807 D1 Q811 A2 R37 C1 R46 C2 R5052 A5 R536 D5 R867 D1
C2009 C1 C2036 C2 C229 B1 C254 B2 C360 D1 C48 A2 C5072 C4 C5098 C1 C5116 A2 C533 B6 C810 A1 C964 B4 FB5001 D6 L808 D1 R15 D2 R38 C1 R47 B2 R5053 B4 R54 C2 R870 B1
C2010 C2 C2037 C2 C23 A2 C267 C2 C361 C1 C49 A2 C5073 D1 C5099 C3 C5117 A2 C534 B6 C818 A1 C968 A1 FB5001 D6 L809 D1 R19 C3 R39 C1 R476 D3 R513 C5 R549 A5 R958 A4
C2011 C1 C2038 B1 C230 B1 C267 A2 C363 D1 C5 D2 C5074 D3 C51 D4 C5119 D5 C54 A3 C821 B1 C969 B4 FB5005 D6 L810 D1 R20 C3 R4 C4 R478 D3 R514 C5 R55 C3 R959 A4
C2012 B1 C2039 A1 C232 B1 C27 A2 C37 C2 C50 B3 C5075 A1 C5100 B3 C5120 D5 C563 B5 C824 B1 C972 A4 FB5005 C6 L811 D1 R207 B1 R40 C1 R48 B2 R515 C5 R550 A5 R966 A3
C2013 C2 C2040 A1 C238 B2 C272 C1 C38 D2 C503 C6 C5076 D3 C5101 B3 C5121 D6 C564 B5 C828 A1 C974 A3 FB801 D2 L812 D1 R21 C3 R4001 C4 R49 B2 R516 C5 R551 A5 R967 A3
C2018 C1 C2041 D1 C239 B1 C273 B2 C39 A4 C504 C6 C5078 D4 C5102 B3 C5121 C6 C565 B5 C845 D1 C976 A3 FB802 D2 L813 D1 R212 B1 R4002 B4 R50 C2 R517 C5 R552 D4 ZD1 C4
C2021 C1 C21 A2 C24 A2 C276 C1 C4 D3 C5043 A4 C5079 C3 C5103 B3 C5122 D6 C566 B5 C847 D1 C978 A3 IC504 A4 L814 D1 R216 B1 R4003 C4 R5011 A3 R518 C5 R553 A5
C2022 B2 C213 B1 C241 B2 C279 B1 C40 A3 C5044 B4 C5080 A3 C5104 B3 C5122 C6 C569 B5 C849 D1 C980 A3 IC505 A4 L819 D1 R231 B2 R4004 C4 R5012 A3 R519 D5 R554 A5
C2023 B2 C214 B1 C244 B2 C28 A2 C4007 C4 C5045 A4 C5082 A2 C5105 B3 C5125 B3 C570 C5 C851 D1 D1 D5 L187 A3 L820 D1 R232 B2 R4005 C4 R5041 A4 R52 C1 R555 A5
C2025 B1 C215 B1 C245 B2 C282 B1 C4009 C4 C5046 B4 C5083 D3 C5106 B3 C5126 B3 C573 A6 C852 D1 D2 C4 L201 B2 L821 D1 R233 C2 R4006 C4 R5042 A4 R520 D4 R556 D4
C2026 C1 C217 B1 C246 B2 C284 B1 C4010 C4 C5047 A4 C5084 D4 C5107 B3 C5127 B2 C574 A6 C853 D1 D401 B3 L206 B1 L822 D1 R240 C2 R4008 C4 R5043 A4 R529 B5 R56 C2
C2027 A1 C218 B1 C247 B2 C286 A1 C4011 C4 C5048 B4 C5090 A2 C5108 B3 C5128 B2 C59 A3 C860 D1 D501 D5 L207 B2 L824 D2 R242 C2 R4009 C4 R5044 A4 R53 B2 R57 A3
C2028 A1 C22 A2 C248 B2 C29 A2 C41 A3 C5049 A4 C5091 D5 C5109 B3 C52 D4 C591 A5 C861 D1 D502 D4 L208 C1 Q2 C4 R248 C2 R4010 C4 R5045 A5 R530 B5 R58 A3
C2029 B1 C221 B1 C249 B2 C290 B1 C42 A2 C5050 A4 C5092 D4 C5110 B3 C523 C5 C592 A5 C864 D1 D503 D4 L5041 A4 Q3 C3 R264 C2 R41 C1 R5046 A4 R531 B5 R5 A3



# POWER BOARD

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# CIRCUIT DIAGRAM - POWER BOARD

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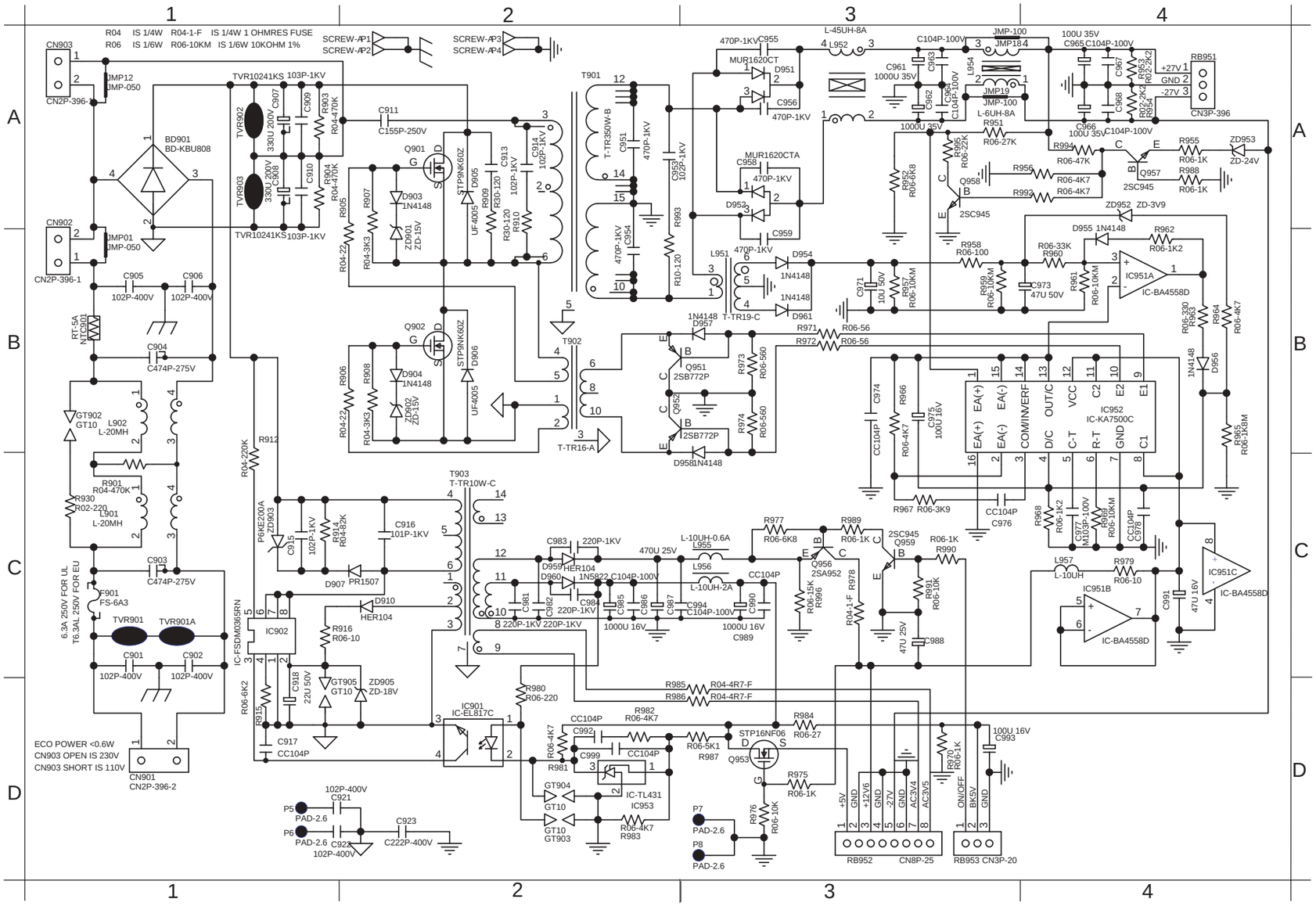


| | | | | | | | |
|---|---|---|---|---|---|---|---|
| BD901 | A1 | C984 | C2 | L902 | B1 | R967 | C3 |
| C901 | C1 | C985 | C2 | L951 | B3 | R968 | C4 |
| C902 | C1 | C986 | C2 | L952 | A3 | R969 | C4 |
| C903 | C1 | C987 | C2 | L954 | A3 | R970 | D3 |
| C904 | B1 | C988 | C3 | L955 | C3 | R971 | B3 |
| C905 | B1 | C990 | C3 | L956 | C3 | R972 | B3 |
| C906 | B1 | C991 | C4 | L957 | C4 | R973 | B3 |
| C907 | A1 | C992 | D2 | NTC901 | B1 | R974 | B3 |
| C908 | A1 | C993 | D3 | Q901 | A2 | R975 | D3 |
| C909 | A1 | C994 | C3 | Q902 | B2 | R976 | D3 |
| C910 | A1 | C999 | D2 | Q951 | B3 | R977 | C3 |
| C911 | A2 | CN901 | D1 | Q952 | B2 | R978 | C3 |
| C913 | A2 | CN902 | B1 | Q953 | D3 | R980 | D2 |
| C914 | A2 | CN903 | A1 | Q956 | C3 | R981 | D2 |
| C915 | C1 | D903 | A2 | Q957 | A4 | R982 | D2 |
| C916 | C2 | D904 | B2 | Q958 | A3 | R983 | D2 |
| C917 | D1 | D905 | A2 | Q959 | C3 | R984 | D3 |
| C918 | D1 | D906 | B2 | R901 | C1 | R985 | D3 |
| C921 | D1 | D907 | C2 | R903 | A1 | R986 | D3 |
| C922 | D1 | D910 | C2 | R904 | A1 | R987 | D3 |
| C923 | D2 | D951 | A3 | R905 | A2 | R988 | A4 |
| C951 | A2 | D952 | A3 | R906 | B2 | R989 | C3 |
| C953 | A2 | D954 | B3 | R907 | A2 | R990 | C3 |
| C954 | B2 | D955 | B4 | R908 | B2 | R991 | C3 |
| C955 | A3 | D956 | B4 | R909 | A2 | R992 | A4 |
| C955 | A4 | D957 | B3 | R910 | A2 | R993 | B2 |
| C956 | A3 | D958 | B3 | R912 | B1 | R994 | A4 |
| C958 | A3 | D959 | C2 | R914 | C1 | R995 | A3 |
| C959 | B3 | D960 | C2 | R915 | D1 | R996 | C3 |
| C961 | A3 | D961 | B3 | R916 | C1 | RB951 | A4 |
| C962 | A3 | F901 | C1 | R930 | C1 | RB952 | D3 |
| C963 | A3 | GT902 | B1 | R951 | A3 | RB953 | D3 |
| C964 | A3 | GT903 | D2 | R952 | A3 | T901 | A2 |
| C965 | A4 | GT904 | D2 | R953 | A4 | T902 | B2 |
| C967 | A4 | GT905 | D1 | R954 | A4 | T903 | C2 |
| C968 | A4 | IC901 | D2 | R955 | A4 | TVR901 | C1 |
| C971 | B3 | IC902 | C1 | R956 | A4 | TVR901A | C1 |
| C973 | B4 | IC951A | B4 | R957 | B3 | TVR902 | A1 |
| C974 | B3 | IC951B | C4 | R958 | B3 | TVR903 | A1 |
| C975 | B3 | IC951C | C4 | R959 | B3 | ZD901 | B2 |
| C976 | C3 | IC952 | B4 | R960 | B4 | ZD902 | B2 |
| C977 | C4 | IC953 | D2 | R961 | B4 | ZD903 | C1 |
| C978 | C4 | JMP01 | B1 | R962 | B4 | ZD905 | D2 |
| C979 | C4 | JMP12 | A1 | R963 | B4 | ZD952 | A4 |
| C981 | C2 | JMP18 | A3 | R964 | B4 | ZD953 | A4 |
| C982 | C2 | JMP19 | A3 | R965 | B4 | | |
| C983 | C2 | L901 | C1 | R966 | B3 | | |

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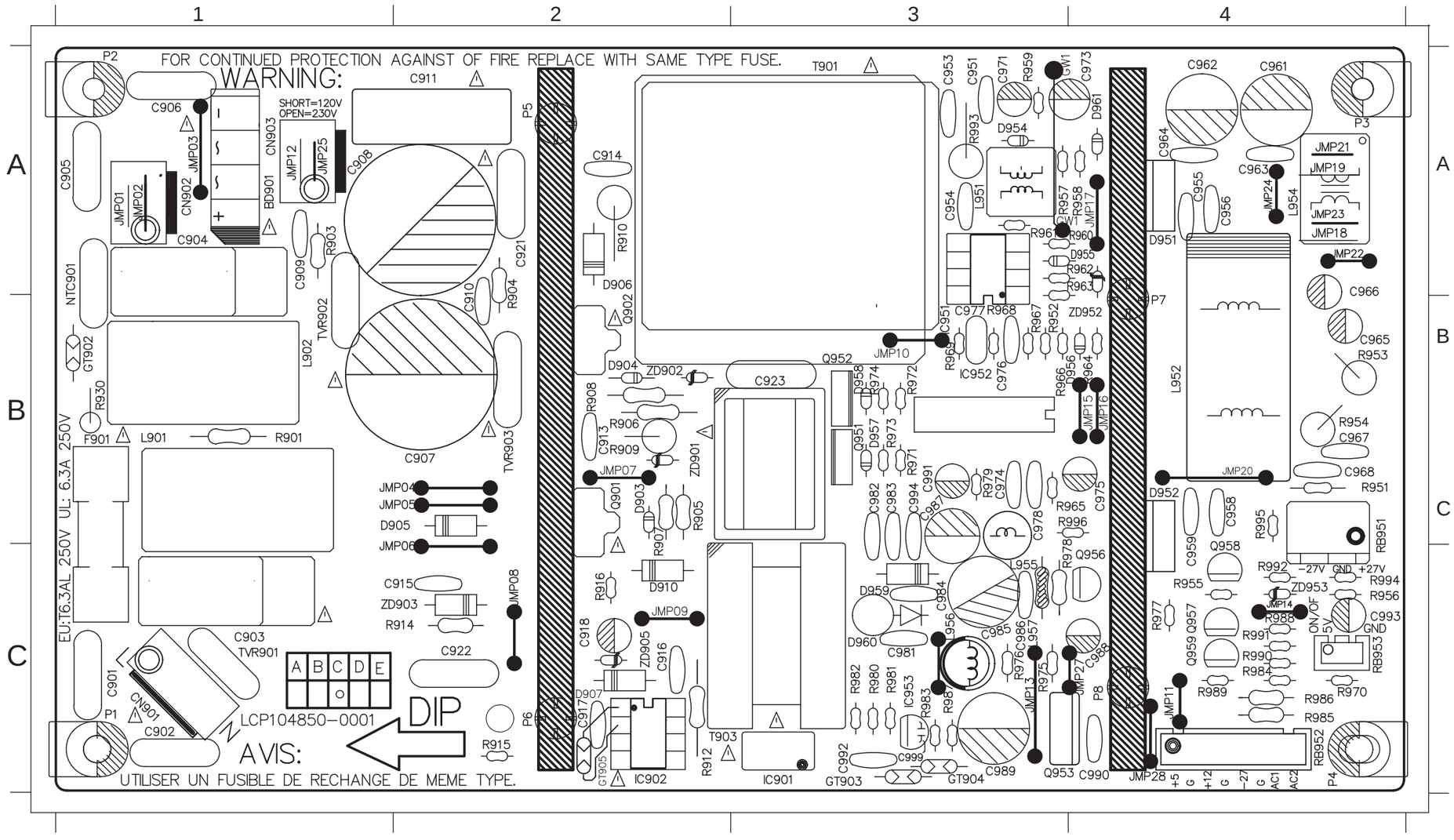
# PCB LAYOUT - POWER BOARD(TOP)




| | | | | | |
|---|---|---|---|---|---|
| BD901 | A1 | GT905 | C2 | R970 | C4 |
| C901 | C1 | IC901 | C3 | R971 | B3 |
| C902 | C1 | IC902 | C2 | R972 | B3 |
| C903 | C1 | IC951 | A3 | R973 | B3 |
| C904 | A1 | IC952 | B3 | R974 | B3 |
| C905 | A1 | IC953 | C3 | R975 | C3 |
| C906 | A1 | JMP01 | A1 | R976 | C3 |
| C907 | B2 | JMP02 | A1 | R977 | C4 |
| C908 | A1 | JMP03 | A1 | R978 | C3 |
| C909 | A1 | JMP04 | B2 | R979 | B3 |
| C910 | B2 | JMP05 | B2 | R980 | C3 |
| C911 | A2 | JMP06 | B2 | R981 | C3 |
| C913 | B2 | JMP07 | B2 | R982 | C3 |
| C914 | A2 | JMP08 | C2 | R983 | C3 |
| C915 | C2 | JMP09 | C2 | R984 | C4 |
| C916 | C2 | JMP10 | B3 | R985 | C4 |
| C917 | C2 | JMP11 | C4 | R986 | C4 |
| C918 | C2 | JMP12 | A1 | R987 | C3 |
| C921 | A2 | JMP13 | C3 | R988 | C4 |
| C922 | C2 | JMP14 | C4 | R989 | C4 |
| C923 | B3 | JMP18 | A4 | R990 | C4 |
| C951 | B3 | JMP19 | A4 | R991 | C4 |
| C951 | B4 | JMP19 | A4 | R992 | C4 |
| C953 | A3 | JMP20 | B4 | R993 | A3 |
| C954 | A3 | JMP21 | A4 | R994 | C4 |
| C955 | A4 | JMP22 | A4 | R995 | B4 |
| C956 | A4 | JMP24 | A4 | R996 | B3 |
| C958 | B4 | JMP25 | A1 | RB951 | C4 |
| C959 | B4 | JMP27 | C4 | RB952 | C4 |
| C961 | A4 | JMP28 | C4 | RB953 | C4 |
| C962 | A4 | JMP29 | A4 | T901 | A3 |
| C963 | A4 | L901 | B1 | T903 | C2 |
| C964 | A4 | L902 | B1 | TVR901 | C1 |
| C965 | B4 | L951 | A3 | TVR902 | B1 |
| C967 | B4 | L952 | B4 | TVR903 | B2 |
| C968 | B4 | L954 | A4 | ZD901 | B2 |
| C971 | A3 | L955 | C3 | ZD902 | B2 |
| C973 | A4 | L956 | C3 | ZD903 | C2 |
| C974 | B3 | L957 | C3 | ZD905 | C2 |
| C976 | B3 | NTC901 | A1 | ZD952 | A4 |
| C977 | B3 | Q901 | B2 | ZD953 | C4 |
| C978 | B3 | Q902 | B2 | | |
| C978 | B3 | Q951 | B3 | | |
| C981 | C3 | Q952 | B3 | | |
| C982 | B3 | Q953 | C3 | | |
| C983 | B3 | Q956 | C4 | | |
| C984 | C3 | Q957 | C4 | | |
| C985 | C3 | Q958 | C4 | | |
| C986 | C3 | Q959 | C4 | | |
| C987 | B3 | R901 | B1 | | |
| C988 | C4 | R903 | A1 | | |
| C989 | C3 | R904 | B2 | | |
| C990 | C4 | R905 | B2 | | |
| C991 | B3 | R906 | B2 | | |
| C992 | C3 | R907 | B2 | | |
| C993 | C4 | R908 | B2 | | |
| C994 | B3 | R909 | B2 | | |
| C999 | C3 | R910 | A2 | | |
| CN901 | C1 | R912 | C2 | | |
| CN902 | A1 | R914 | C2 | | |
| CN903 | A1 | R915 | C2 | | |
| CT902 | B1 | R916 | C2 | | |
| D903 | B2 | R930 | B1 | | |
| D904 | B2 | R951 | B4 | | |
| D905 | B2 | R952 | B3 | | |
| D906 | A2 | R953 | B4 | | |
| D907 | C2 | R954 | B4 | | |
| D910 | C2 | R955 | C4 | | |
| D951 | A4 | R956 | C4 | | |
| D952 | B4 | R957 | A3 | | |
| D954 | A3 | R958 | A4 | | |
| D955 | A3 | R959 | A3 | | |
| D957 | B3 | R960 | A3 | | |
| D958 | B3 | R961 | A3 | | |
| D959 | C3 | R962 | A3 | | |
| D960 | C3 | R963 | A3 | | |
| D961 | A4 | R965 | B3 | | |
| F901 | B1 | R966 | B3 | | |
| GT903 | C3 | R967 | B3 | | |
| GT904 | C3 | R968 | B3 | | |

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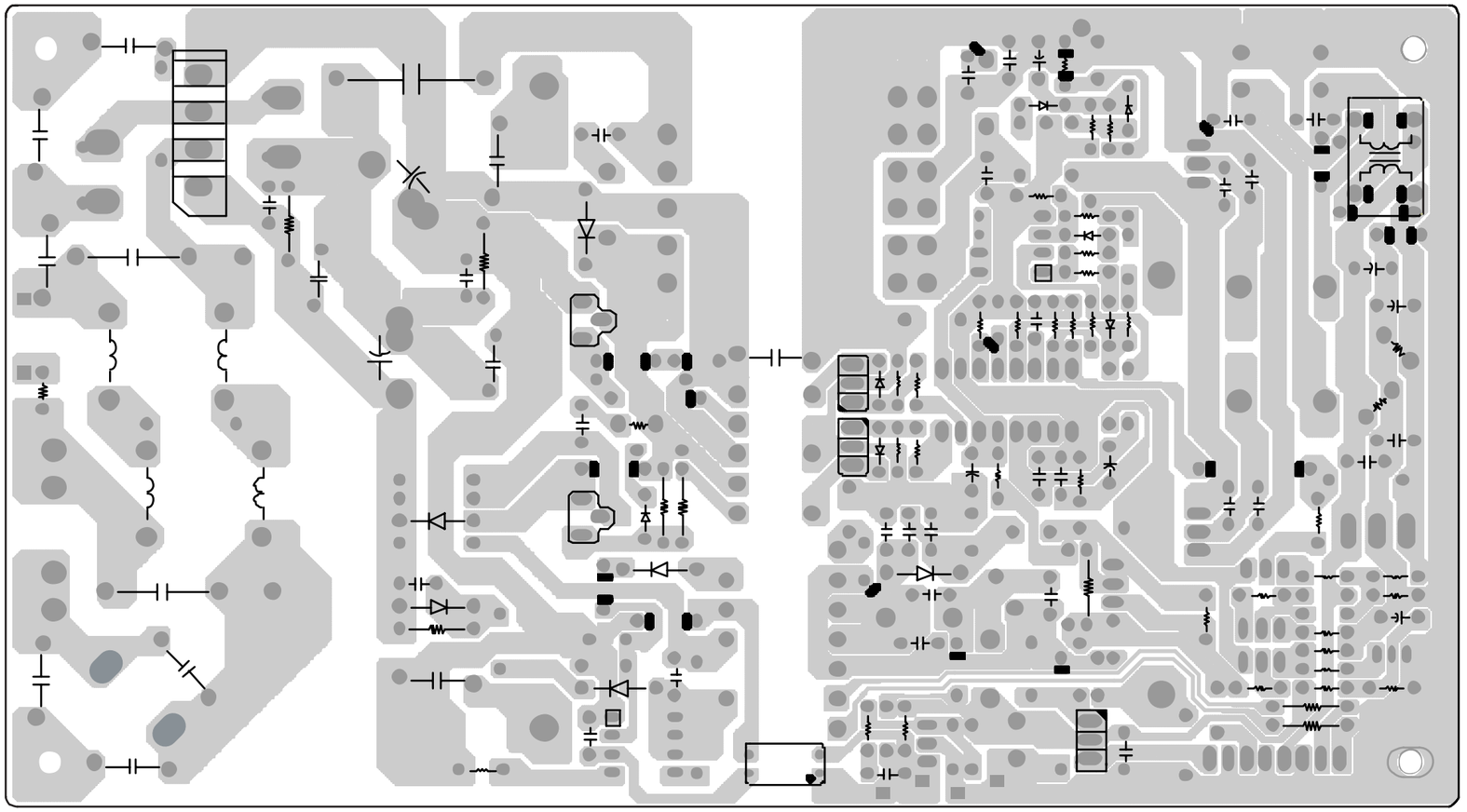
## PCB LAYOUT - POWER BOARD(BOTTOM)



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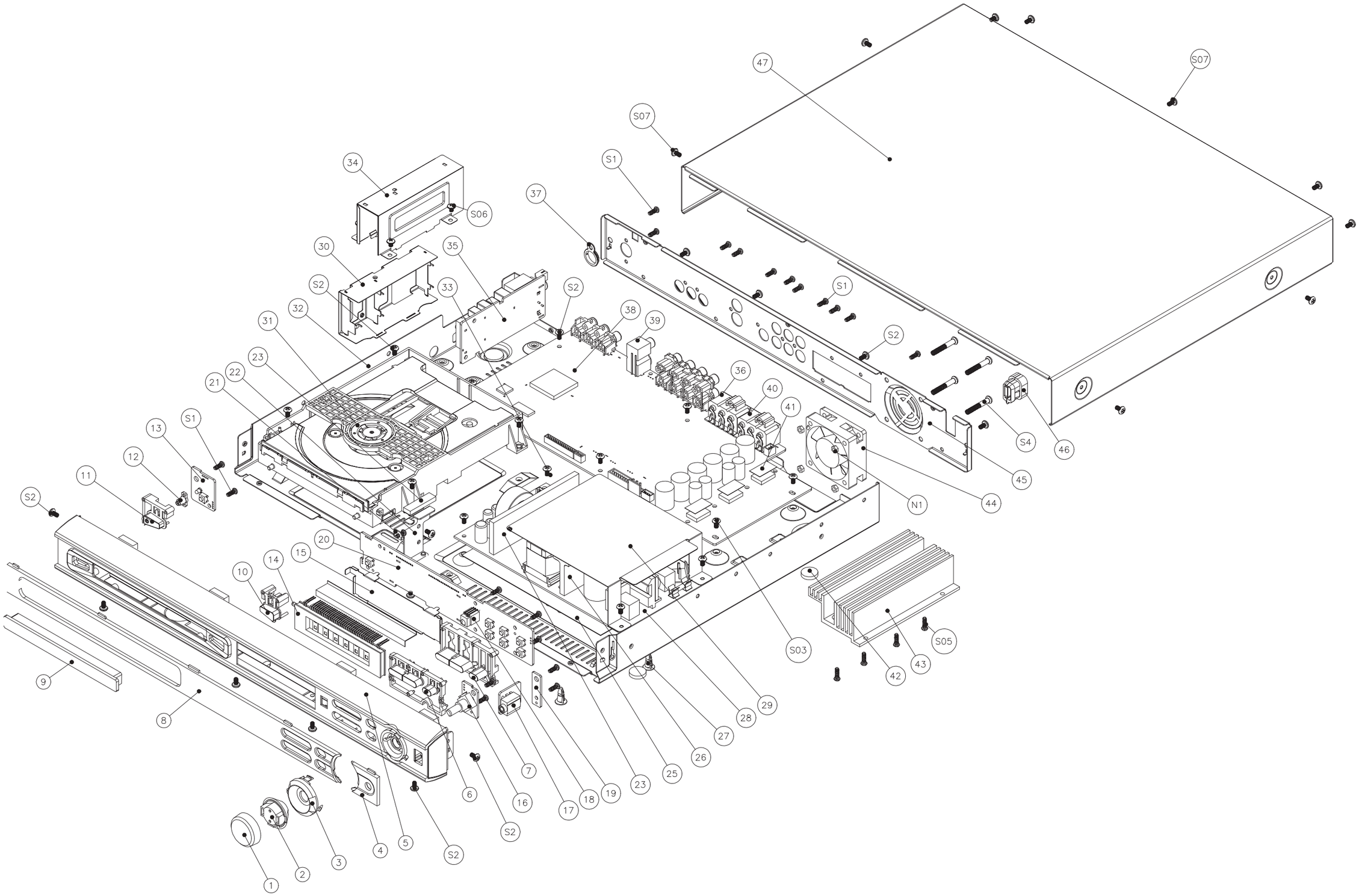
## Explorer view



## *MECHANICAL PARTS - MAIN UNIT (KN010XXXXXXXXX = BOM 2)*

**MISCELLANEOUS**

| | |
|---|---|
| 9965 000 27152 | VOLUMR LENS PMMA LF |
| 9965 000 23647 | DVD DOOR HIPS |
| 9965 000 27153 | DISPLAY LENS PMMA L389.1XW28.7 |
| 9965 000 27149 | FRONT PANEL HIPS 94V2 PAINT S |
| 9965 000 23639 | VOLUME KNOB ABS |
| 9965 000 23650 | POWER LED LENS PMMA |
| 9965 000 29291 | DVD LOADER ME L2HR3402 |
| 9965 000 27150 | POWER BUTTON PAINT BLACK 8019 |
| 9965 000 23641 | VOLUME RING ABS |
| 9965 000 12817 | BUSHING /21/21R/30S/37S |
| 9965 000 23640 | VOLUME DOCKING ABS |
| 9965 000 23644 | FUNCTION BUTTON 1 ABS |
| 9965 000 27143 | SAT SPK ASS'Y 100WX5 3OHM |
| 9965 000 23571 | FOOT RUBBER DIA14XT3MM WHITE |
| 9965 000 27144 | SUBWOOFER ASS'Y 100W 3OHM |
| 9965 000 27151 | OPEN/CLOSE BUTTON PAINT BALCK |
| 9965 000 26968 | DC FAN 12V 0.09A SPEED: 4000RPM |
| 9965 000 23645 | FUNCTION BUTTON 2 ABS |
| 9965 000 27819 | POWER PCB |
| 9965 000 27816 | RADIO PCB |

**SUBWOOFER ASSEMBLY BREAKDOWN**

| | |
|---|---|
| 9965 000 27195 | FRAME A'SSY |
| 9965 000 27196 | CLOTH FRAME |
| 9965 000 27197 | CLOTH |
| 9965 000 27198 | PLASTIC FOOT |
| 9965 000 26668 | RUBBER FOOT |
| 9965 000 29297 | CABLE A'SSY PURPLE |

**SATELLITE SPEAKER ASSEMBLY BREAKDOWN**

| | |
|---|---|
| 9965 000 27122 | SPEAKER BOX-L |
| 9965 000 27183 | SPEAKER BOX-R |
| 9965 000 27184 | SPEAKER BOX SURROUND-L |
| 9965 000 27185 | SPEAKER BOX SURROUND-R |
| 9965 000 27186 | FRAME A'SSY |
| 9965 000 27187 | FRAME |
| 9965 000 27188 | CLOTH |
| 9965 000 27189 | TW BRACKET |
| 9965 000 26663 | RUBBER FOOT |
| 9965 000 27190 | SPEAKER BOX |
| 9965 000 27191 | FRAME A'SSY |
| 9965 000 27192 | FRAME |
| 9965 000 27193 | CLOTH |
| 9965 000 27194 | TW BRACKET |
| 9965 000 24036 | BRACKET & SCREW PACKING |
| 9965 000 28778 | CABLE ASS'Y L5.2M-WHITE |
| 9965 000 28784 | CABLE ASS'Y L5.2M-RED |
| 9965 000 28786 | CABLE ASS'Y L15.2M-BLUE |
| 9965 000 28787 | CABLE ASS'Y L15.2M-GRAY |

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## *ELECTRICAL PARTS LIST - CONTROL PCBA*

**MISCELLANEOUS**

| | | |
|---|---|---|
| LD2201 | 9965 000 26953 | LED 3 DIA RED ROUND HP |
| SN2201 | 9965 000 26956 | IRT RECEIVER IRM-2638F4 |
| TA2201 | 9965 000 26950 | AI TACT SW SKHVBE3520 ALPS |
| TA2202 | 9965 000 26950 | AI TACT SW SKHVBE3520 ALPS |
| TA2203 | 9965 000 26950 | AI TACT SW SKHVBE3520 ALPS |
| TA2204 | 9965 000 26950 | AI TACT SW SKHVBE3520 ALPS |
| TA2205 | 9965 000 26950 | AI TACT SW SKHVBE3520 ALPS |
| TA2206 | 9965 000 26950 | AI TACT SW SKHVBE3520 ALPS |
| TA2207 | 9965 000 26950 | AI TACT SW SKHVBE3520 ALPS |
| TA2208 | 9965 000 26952 | TACT SW H5.0MM 2PIN 160GF |
| VR2201 | 9965 000 29233 | ENCODER L20 A=12 WITHO CC |
| XL2201 | 9965 000 23590 | CRYSTAL 4MHZ HC-49US |

**DIODES**

| | | |
|---|---|---|
| D2201 | 9965 000 26949 | DIODE SW 1N4148 |
| D2202 | 9965 000 26949 | DIODE SW 1N4148 |
| DP2201 | 9965 000 26957 | VFD 100X25MM PIN L |
| ZD2201 | 9965 000 26942 | DIODE ZENR 5.0-5.2V 0.5W |
| ZD2202 | 9965 000 26930 | CHIP ZENER 5.6V 0.05 0.5W |
| ZD2203 | 9965 000 26930 | CHIP ZENER 5.6V 0.05 0.5W |

**TRANSISTOR & INTEGRATED CIRCUIT**

| | | |
|---|---|---|
| IC2201 | 9965 000 23592 | IC 18PIN HT48R05A-1 SOP |
| IC2202 | 9940 000 00907 | IC 52 PIN TP6311QH |
| Q2201 | 9940 000 00921 | XISTR PNP 2SA812 HFE:200-400 |
| Q2202 | 9940 000 00921 | XISTR PNP 2SA812 HFE:200-400 |
| Q2203 | 9940 000 00921 | XISTR PNP 2SA812 HFE:200-400 |
| Q2204 | 9940 000 00915 | XISTR NPN 2SC1623 |
| Q2205 | 9940 000 00921 | XISTR PNP 2SA812 HFE:200-400 |

## *ELECTRICAL PARTS LIST - RADIO PCB ASSY (TUNER)*

**MISCELLANEOUS**

| | | |
|---|---|---|
| ANT001 | 9965 000 24668 | RF JACK MALE TYPE 75 OHM |
| L001 | 9965 000 23587 | MOULDED COIL 2.5T 57-89NH |
| L02 | 9965 000 23586 | SPRING COIL 0.8X4.5DX(1-2)2.5T |
| T001 | 9965 000 24672 | AM IFT 450KHZ 180PF Q=80MIN |
| T002 | 9965 000 24673 | AM IFT 450KHZ 180PF Q=80MIN |
| T003 | 9965 000 24673 | AM IFT 450KHZ 180PF Q=80MIN |
| T005 | 9965 000 24674 | OSC COIL AM 120UH (796KHZ) |
| T006 | 9965 000 26964 | ANT OSC AM 4-6:10T 1-3:86T |
| VC001 | 9965 000 24676 | CONDTRIM 3-10PF NP0 |
| VC002 | 9965 000 24676 | CONDTRIM 3-10PF NP0 |
| VD001 | 9965 000 27006 | DIODE TUNG FM 1SV101 |
| VD002 | 9965 000 27006 | DIODE TUNG FM 1SV101 |
| VD003 | 9965 000 26965 | DIODE TUNG AM 1SV149B |
| VD004 | 9965 000 26965 | DIODE TUNG AM 1SV149B |
| VR001 | 9965 000 27005 | CNTL TRIMR 30K OHM |
| XL1 | 9965 000 23588 | CRYSTAL 75KHZ +/-15 |

**CAPCITORS**

| | | |
|---|---|---|
| CN002 | 9965 000 25150 | CONNECTOR S2B-XH-A 2 PIN |
| CO47 | 9965 000 27096 | COND DISC 100PF 50V 5% NPO |

**DIODES**

| | | |
|---|---|---|
| D001 | 9965 000 26949 | DIODE SW 1N4148 PB<1000PPM |
| D002 | 9965 000 26949 | DIODE SW 1N4148 PB<1000PPM |
| D003 | 9965 000 26949 | DIODE SW 1N4148 PB<1000PPM |
| D004 | 9965 000 26940 | DIODE ZENR 11.9-12.4V 0.5W |
| D005 | 9965 000 26949 | DIODE SW 1N4148 PB<1000PPM |

**TRANSISTOR & INTEGRATED CIRCUIT**

| | | |
|---|---|---|
| IC001 | 9965 000 27003 | IC 44 PIN TEA5757H QFP44 |
| IF001 | 9965 000 24093 | CERFILTER 3P 10.7MHZ |
| IF002 | 9965 000 24670 | CER FILTER 10.7 MHZ |
| Q001 | 4822 130 41198 | 2SC945P |
| Q002 | 4822 130 41198 | 2SC945P |
| Q003 | 9940 000 00921 | XISTR PNP 2SA812 HFE:200-400 |
| Q003 | 9965 000 27004 | XISTR PNP BF550 SOT23 |

Note : Only the parts mentioned in this list are normal service spare parts.

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## *ELECTRICAL PARTS LIST - MAIN + PH.JACK PCB*

### MISCELLANEOUS

| | | |
|---|---|---|
| FB201 | 9965 000 26944 | CHIP BEAD 60 OHM 100MHZ |
| FB301 | 9965 000 26944 | CHIP BEAD 60 OHM 100MHZ |
| FB302 | 9965 000 26944 | CHIP BEAD 60 OHM 100MHZ |
| FB303 | 9965 000 26944 | CHIP BEAD 60 OHM 100MHZ |
| FB5001 | 9965 000 27076 | CHIP BEAD 100 OHM AT 100MHZ |
| FB5003 | 9965 000 26925 | CHIP INDUC 10 UH 0.1 SMD 0805 |
| FB5004 | 9965 000 27076 | CHIP BEAD 100 OHM AT 100MHZ |
| FB5005 | 9965 000 27076 | CHIP BEAD 100 OHM AT 100MHZ |
| FB801 | 9965 000 26944 | CHIP BEAD 60 OHM 100MHZ |
| FB802 | 9965 000 26944 | CHIP BEAD 60 OHM 100MHZ |
| JK401 | 9965 000 24074 | RCA JACK 6P WHTX3/REDX3 |
| JK5002 | 9965 000 25154 | PHONE JACK D3.5 9 PIN NICKEL |
| JK501 | 9965 000 27077 | SPK JACK 6P RD-WT-GN |
| JK502 | 9965 000 27078 | SPK JACK 6P GY-BU-PURPLE |
| JK801 | 9965 000 23598 | RCA JACK 3P RED/BLU/GRN |
| JK802 | 9965 000 25153 | RCA+DIN JK 1RCA+4P DIN YEL |
| JK805 | 9940 000 01576 | RCA JACK 1P BLACK |
| L187 | 9965 000 26926 | CHIP INDUC 1 UH 0.1 |
| L201 | 9965 000 26925 | CHIP INDUC 10 UH 0.1 SMD 0805 |
| L202 | 9965 000 26926 | CHIP INDUC 1 UH 0.1 |
| L203 | 9965 000 26926 | CHIP INDUC 1 UH 0.1 |
| L204 | 9965 000 26926 | CHIP INDUC 1 UH 0.1 |
| L205 | 9965 000 26926 | CHIP INDUC 1 UH 0.1 |
| L206 | 9965 000 26926 | CHIP INDUC 1 UH 0.1 |
| L207 | 9965 000 26944 | CHIP BEAD 60 OHM 100MHZ |
| L208 | 9965 000 26926 | CHIP INDUC 1 UH 0.1 |
| L351 | 9965 000 26926 | CHIP INDUC 1 UH 0.1 |
| L352 | 9965 000 26926 | CHIP INDUC 1 UH 0.1 |
| L5001 | 9965 000 26938 | INDUCTOR 100 UH 0.1 |
| L5002 | 9965 000 26938 | INDUCTOR 100 UH 0.1 |
| L501 | 9965 000 27079 | INDUCTOR 22UH 20% 6A LF |
| L502 | 9965 000 27079 | INDUCTOR 22UH 20% 6A LF |
| L503 | 9965 000 27079 | INDUCTOR 22UH 20% 6A LF |
| L504 | 9965 000 27079 | INDUCTOR 22UH 20% 6A LF |
| L5041 | 9965 000 26926 | CHIP INDUC 1 UH 0.1 |
| L505 | 9965 000 27079 | INDUCTOR 22UH 20% 6A LF |
| L506 | 9965 000 27079 | INDUCTOR 22UH 20% 6A LF |
| L801 | 9965 000 26926 | CHIP INDUC 1 UH 0.1 |
| L802 | 9965 000 26926 | CHIP INDUC 1 UH 0.1 |
| L803 | 9965 000 26926 | CHIP INDUC 1 UH 0.1 |
| L804 | 9965 000 26926 | CHIP INDUC 1 UH 0.1 |
| L805 | 9965 000 26926 | CHIP INDUC 1 UH 0.1 |
| L806 | 9965 000 26926 | CHIP INDUC 1 UH 0.1 |
| L807 | 9965 000 26926 | CHIP INDUC 1 UH 0.1 |
| L808 | 9965 000 26926 | CHIP INDUC 1 UH 0.1 |
| L809 | 9965 000 26926 | CHIP INDUC 1 UH 0.1 |
| L810 | 9965 000 26926 | CHIP INDUC 1 UH 0.1 |
| L811 | 9965 000 26926 | CHIP INDUC 1 UH 0.1 |
| L812 | 9965 000 26926 | CHIP INDUC 1 UH 0.1 |
| L813 | 9965 000 26926 | CHIP INDUC 1 UH 0.1 |
| L814 | 9965 000 26926 | CHIP INDUC 1 UH 0.1 |
| L823 | 9965 000 26926 | CHIP INDUC 1 UH 0.1 |
| L824 | 9965 000 27075 | CHIP BEAD 300 OHM 25% 100 |
| L951 | 9965 000 26943 | BEAD FERIT DIA3.5X6MM |
| L952 | 9965 000 26943 | BEAD FERIT DIA3.5X6MM |
| L955 | 9965 000 26938 | INDUCTOR 100 UH 0.1 |
| L956 | 9965 000 26938 | INDUCTOR 100 UH 0.1 |
| L957 | 9965 000 26943 | BEAD FERIT DIA3.5X6MM |
| CF5041 | 9965 000 23595 | RES 2P 600KHZ ORANGE BOX |
| CF5042 | 9940 000 00823 | RESONATOR 2PIN 700KHZ |
| CN201 | 9965 000 27002 | CONNECTOR 9 PIN |
| CN202 | 9965 000 27000 | CONNECTOR 7 PIN |
| CN5001 | 9965 000 26994 | CONNECTOR 4 PIN |
| CN801 | 9965 000 25152 | CHIP CONNECTOR 24PIN |
| CN802 | 9965 000 26996 | CONNECTOR 6 PIN |
| CN803 | 9965 000 26995 | CONNECTOR 5 PIN |
| CN901A | 9965 000 25151 | CONNECTOR 3 PIN CL3962WVO |
| CN902A | 9965 000 25149 | CONNECTOR B8B-XH-A 8 PIN |
| CN903A | 9965 000 26993 | CONNECTOR 3 PIN |
| CN908A | 9965 000 25145 | CONNECTOR B2B-XH-A 2 PIN |

### CAPCITORS

| | | |
|---|---|---|
| C511 | 9965 000 26917 | CHIP CAP 0.1UF/100V X7R /- 0.1 |
| C512 | 9965 000 26917 | CHIP CAP 0.1UF/100V X7R /- 0.1 |
| C523 | 9965 000 23896 | CHIP CAP 560PF 100V 10% |
| C524 | 9965 000 23896 | CHIP CAP 560PF 100V 10% |
| C525 | 9965 000 23896 | CHIP CAP 560PF 100V 10% |
| C526 | 9965 000 23896 | CHIP CAP 560PF 100V 10% |
| C541 | 9965 000 26917 | CHIP CAP 0.1UF/100V X7R /- 0.1 |
| C542 | 9965 000 26917 | CHIP CAP 0.1UF/100V X7R /- 0.1 |
| C563 | 9965 000 23896 | CHIP CAP 560PF 100V 10% |
| C564 | 9965 000 23896 | CHIP CAP 560PF 100V 10% |
| C565 | 9965 000 23896 | CHIP CAP 560PF 100V 10% |
| C566 | 9965 000 23896 | CHIP CAP 560PF 100V 10% |
| C580 | 9965 000 26917 | CHIP CAP 0.1UF/100V X7R /- 0.1 |
| C581 | 9965 000 26917 | CHIP CAP 0.1UF/100V X7R /- 0.1 |
| C591 | 9965 000 23896 | CHIP CAP 560PF 100V 10% |
| C592 | 9965 000 23896 | CHIP CAP 560PF 100V 10% |
| C596 | 9965 000 23896 | CHIP CAP 560PF 100V 10% |
| C597 | 9965 000 23896 | CHIP CAP 560PF 100V 10% |
| C837 | 9965 000 27075 | CHIP BEAD 300OHM 25%100MHZ |
| C951 | 9965 000 26917 | CHIP CAP 0.1UF/100V X7R /- 0.1 |
| C952 | 9965 000 26917 | CHIP CAP 0.1UF/100V X7R /- 0.1 |
| C961 | 9965 000 23606 | COND ELECT 1000UF 16V 20% |

### RESISTORS

| | | |
|---|---|---|
| R838 | 9965 000 27083 | CHIP INDUCTOR 1.8UH 10% SMD |
| R957 | 9965 000 27084 | RES. 47 OHM 1W 5% |
| R968 | 9965 000 27085 | FUSEABLE RES 1? 1/4W 5% |
| RA301 | 9940 000 00865 | RES ARRAY 4X33R 1/10W 5% |
| RA351 | 9940 000 00865 | RES ARRAY 4X33R 1/10W 5% |
| RA352 | 9940 000 00865 | RES ARRAY 4X33R 1/10W 5% |
| RB151 | 9965 000 27001 | CONNECTOR 8 PIN |
| RN201 | 9965 000 23613 | CHIP ARRAY 4X4.7KOHM 1/16W |
| RN202 | 9940 000 00865 | RES ARRAY 4X33R 1/10W 5% |
| RN203 | 9940 000 00865 | RES ARRAY 4X33R 1/10W 5% |
| RN204 | 9965 000 23613 | CHIP ARRAY 4X4.7KOHM 1/16W |
| RN205 | 9965 000 23614 | CHIP ARRAY 10 OHMX4 1/16 W |
| RN206 | 9965 000 23614 | CHIP ARRAY 10 OHMX4 1/16 W |
| RN207 | 9965 000 23614 | CHIP ARRAY 10 OHMX4 1/16 W |
| RN208 | 9940 000 00865 | RES ARRAY 4X33R 1/10W 5% |
| RN210 | 9965 000 23613 | CHIP ARRAY 4X4.7KOHM 1/16W |
| RN211 | 9940 000 00865 | RES ARRAY 4X33R 1/10W 5% |
| XL201 | 9965 000 23929 | CRYSTAL27MHZ HC-49/US |

### DIODES

| | | |
|---|---|---|
| D1 | 9965 000 19409 | DIODE CHIP BAV16W/IN4148W |
| D2 | 9965 000 19409 | DIODE CHIP BAV16W/IN4148W |
| D301 | 9965 000 19409 | DIODE CHIP BAV16W/IN4148W |
| D302 | 9965 000 19409 | DIODE CHIP BAV16W/IN4148W |
| D303 | 9965 000 19409 | DIODE CHIP BAV16W/IN4148W |
| D304 | 9965 000 19409 | DIODE CHIP BAV16W/IN4148W |
| D305 | 9965 000 19409 | DIODE CHIP BAV16W/IN4148W |
| D306 | 9965 000 19409 | DIODE CHIP BAV16W/IN4148W |
| D307 | 9965 000 19409 | DIODE CHIP BAV16W/IN4148W |
| D308 | 9965 000 19409 | DIODE CHIP BAV16W/IN4148W |
| D309 | 9965 000 19409 | DIODE CHIP BAV16W/IN4148W |
| D310 | 9965 000 19409 | DIODE CHIP BAV16W/IN4148W |
| D311 | 9965 000 19409 | DIODE CHIP BAV16W/IN4148W |
| D312 | 9965 000 19409 | DIODE CHIP BAV16W/IN4148W |
| D313 | 9965 000 19409 | DIODE CHIP BAV16W/IN4148W |
| D314 | 9965 000 19409 | DIODE CHIP BAV16W/IN4148W |
| D315 | 9965 000 19409 | DIODE CHIP BAV16W/IN4148W |
| D316 | 9965 000 19409 | DIODE CHIP BAV16W/IN4148W |
| D401 | 4822 130 83338 | LL4148 |
| D5001 | 9965 000 19409 | DIODE CHIP BAV16W/IN4148W |
| D5002 | 9965 000 19409 | DIODE CHIP BAV16W/IN4148W |
| D501 | 9965 000 19409 | DIODE CHIP BAV16W/IN4148W |
| D502 | 9965 000 19409 | DIODE CHIP BAV16W/IN4148W |
| D503 | 9965 000 19409 | DIODE CHIP BAV16W/IN4148W |
| D504 | 9965 000 19409 | DIODE CHIP BAV16W/IN4148W |
| D505 | 9965 000 19409 | DIODE CHIP BAV16W/IN4148W |
| D506 | 9965 000 19409 | DIODE CHIP BAV16W/IN4148W |
| D801 | 4822 130 83338 | LL4148 |
| D802 | 4822 130 83338 | LL4148 |
| D803 | 4822 130 83338 | LL4148 |
| D951A | 9965 000 19409 | DIODE CHIP BAV16W/IN4148W |
| ZD1 | 9965 000 27086 | CHIP ZENER 9.1V 5% 0.5W (F4) S |
| ZD202 | 9965 000 26942 | DIODE ZENR 5.0-5.2V 0.5W |
| ZD301 | 9965 000 26930 | CHIP ZENER 5.6V 0.05 0.5W (E2) |
| ZD302 | 9965 000 26930 | CHIP ZENER 5.6V 0.05 0.5W (E2) |
| ZD401 | 9965 000 26930 | CHIP ZENER 5.6V 0.05 0.5W (E2) |
| ZD402 | 9965 000 26930 | CHIP ZENER 5.6V 0.05 0.5W (E2) |
| ZD5001 | 9965 000 26941 | DIODE ZENR 6.0-6.3V 0.5W |
| ZD5004 | 9965 000 26930 | CHIP ZENER 5.6V 0.05 0.5W (E2) |
| ZD5005 | 9965 000 26930 | CHIP ZENER 5.6V 0.05 0.5W (E2) |
| ZD501 | 9965 000 26930 | CHIP ZENER 5.6V 0.05 0.5W (E2) |
| ZD801 | 9965 000 26931 | CHIP ZENER 7.5V 0.05 0.5W (F1) |
| ZD802 | 9965 000 26931 | CHIP ZENER 7.5V 0.05 0.5W (F1) |
| ZD803 | 9965 000 26931 | CHIP ZENER 7.5V 0.05 0.5W (F1) |
| ZD804 | 9965 000 26931 | CHIP ZENER 7.5V 0.05 0.5W (F1) |
| ZD805 | 9965 000 26931 | CHIP ZENER 7.5V 0.05 0.5W (F1) |
| ZD806 | 9965 000 26931 | CHIP ZENER 7.5V 0.05 0.5W (F1) |
| ZD807 | 9965 000 26931 | CHIP ZENER 7.5V 0.05 0.5W (F1) |
| ZD808 | 9965 000 26931 | CHIP ZENER 7.5V 0.05 0.5W (F1) |
| ZD809 | 9965 000 26931 | CHIP ZENER 7.5V 0.05 0.5W (F1) |
| ZD810 | 9965 000 26931 | CHIP ZENER 7.5V 0.05 0.5W (F1) |
| ZD951A | 9965 000 26940 | DIODE ZENR 11.9-12.4V 0.5W |
| ZD952 | 9965 000 27087 | DIODE ZENR 6.9-7.2V 0.5W |

Noe : Only the parts mentioned in this list are normal service spare parts.

### TRANSISTOR & INTEGRATED CIRCUIT

| | | |
|---|---|---|
| IC1 | 9965 000 15886 | IC RC4558D |
| IC201 | 9965 000 27088 | IC208P ES6629FDF PQFP ESS |
| IC202 | 9965 000 26975 | IC 48 PIN MX26LV800BTC |
| IC203 | 9965 000 26920 | IC 54 PIN EDS6416AHTA-6B-E |
| IC203 | 9965 000 27089 | IC 54P K4S641632H-UC70 TSOP |
| IC204 | 9940 000 00834 | IC 3PIN LM809 |
| IC205 | 9965 000 23616 | 8PIN M24C02-MN6T ST SD8 |
| IC206 | 9940 000 00835 | IC 20PIN 74F374D |
| IC207 | 9940 000 00835 | IC 20PIN 74F374D |
| IC208 | 9965 000 26932 | IC 3 PIN RT9164-33PLR |
| IC209 | 9965 000 27090 | IC 3 PIN AP1117E18LA 1.8V SOT2 |
| IC210 | 9965 000 27091 | IC 3PIN AP1117E33LA SOT223 3. |
| IC301 | 9965 000 23619 | IC 16 PIN CD4052BM SOIC TI |
| IC351 | 9965 000 26924 | IC 28 PIN WM8772SEDS TSOP |
| IC401 | 9965 000 15886 | IC RC4558D |
| IC402 | 9965 000 15886 | IC RC4558D |
| IC403 | 9965 000 15886 | IC RC4558D |
| IC404 | 9965 000 15886 | IC RC4558D |
| IC405 | 9965 000 26921 | IC 42 PIN M62446AFP |
| IC406 | 9965 000 15886 | IC RC4558D |
| IC407 | 9965 000 15886 | IC RC4558D |
| IC408 | 9965 000 15886 | IC RC4558D |
| IC409 | 9965 000 15886 | IC RC4558D |
| IC5001 | 9965 000 26923 | IC 8 PIN APA3541-TRL SOP-8 |
| IC501 | 9940 000 00846 | IC 24PIN TDA8920BTH |
| IC502 | 9940 000 00846 | IC 24PIN TDA8920BTH |
| IC503 | 9940 000 00846 | IC 24PIN TDA8920BTH |
| IC504 | 9965 000 27092 | IC 14 PIN 74HCU04D PHILIPS TS |
| IC505 | 5322 209 14477 | HEF4013BT |
| IC801 | 9940 000 00853 | IC 64PIN ES6603S |
| IC802 | 9965 000 23620 | IC 28 PIN AM5868S HSOP AMTEK |
| IC953A | 9965 000 26649 | INDUCTOR 6UH 14.5TS 2UEW |
| IC954A | 9965 000 26649 | INDUCTOR 6UH 14.5TS 2UEW |
| Q1 | 9940 000 00915 | XISTR NPN 2SC1623 |
| Q2 | 9940 000 00921 | XISTR PNP 2SA812 HFE:200-400 |
| Q3 | 9940 000 00915 | XISTR NPN 2SC1623 |
| Q301 | 9940 000 00915 | XISTR NPN 2SC1623 |
| Q401 | 9965 000 13683 | TRANSISTOR KTC3875Y-RTK |
| Q402 | 9965 000 13683 | TRANSISTOR KTC3875Y-RTK |
| Q403 | 9940 000 00921 | XISTR PNP 2SA812 HFE:200-400 |
| Q5001 | 9940 000 00915 | XISTR NPN 2SC1623 |
| Q5002 | 4822 130 41651 | 2SC2001L |
| Q5003 | 9940 000 00915 | XISTR NPN 2SC1623 |
| Q501 | 9940 000 00915 | XISTR NPN 2SC1623 |
| Q5041 | 9940 000 00915 | XISTR NPN 2SC1623 |
| Q5042 | 9940 000 00921 | XISTR PNP 2SA812 HFE:200-400 |
| Q803 | 9965 000 26928 | XISTR NPN 2SC2812N 2204 |
| Q804 | 9965 000 26928 | XISTR NPN 2SC2812N 2204 |
| Q805 | 9965 000 26927 | XISTR PNP 2SB1132RT100 |
| Q806 | 9965 000 26927 | XISTR PNP 2SB1132RT100 |
| Q811 | 9940 000 00921 | XISTR PNP 2SA812 HFE:200-400 |
| Q951A | 9965 000 26939 | XISTR PNP 2SA952 NEC |
| Q952A | 9940 000 00915 | XISTR NPN 2SC1623 |
| Q953A | 5322 130 44523 | TIP42C |
| Q954A | 9965 000 26939 | XISTR PNP 2SA952 NEC |
| Q955A | 9940 000 00915 | XISTR NPN 2SC1623 |
| Q956 | 4822 130 41651 | 2SC2001L |

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## *ELECTRICAL PARTS LIST - POWER PCB*

**MISCELLANEOUS**

| | | |
|---|---|---|
| F901 | 9965 000 29292 | LF FUSE SIC 6.3A 250V SLOW |
| NTC901 | 9940 000 00957 | NTC 5R 5A |
| L955 | 9965 000 26649 | INDUCTOR 6UH 14.5TS 2UEW |
| L956 | 9965 000 27104 | INDUCTOR 6UH /-15% D=1.0MM |
| L957 | 9965 000 27105 | CHOKE 10 UH 10% |
| T901 | 9965 000 27112 | SW TRANSTORMER FERRITE |
| T902 | 9940 000 01057 | SW. MODEL TRANSFORMER |
| T903 | 9965 000 27113 | SW TRANSTORMER FERRITE |
| TVR901 | 9940 000 00962 | PTC THERMISTOR 50A 561V |
| TVR902 | 9965 000 27114 | VARISTOR FOR SURGE V. TVR10 |
| TVR903 | 9965 000 27114 | VARISTOR FOR SURGE V. TVR10 |
| ZD901 | 9965 000 27137 | DIODE ZENR 17.5-18.3V 0.5W |

**CAPCITORS**

| | | |
|---|---|---|
| C901 | 9965 000 27116 | CAP.SAFTY Y1 102PF 400V 20% |
| C901 | 9965 000 27115 | CAP.SAFTY Y1 102PF 250V 20% |
| C902 | 9965 000 27115 | CAP.SAFTY Y1 102PF 250V 20% |
| C902 | 9965 000 27116 | CAP.SAFTY Y1 102PF 400V 20% |
| C903 | 9940 000 00932 | COND SAFTY 0.47UF 275V 10% |
| C904 | 9940 000 00932 | COND SAFTY 0.47UF 275V 10% |
| C907 | 9965 000 27123 | CAP.E 330UF 200V 20% 105'C |
| C908 | 9965 000 27123 | CAP.E 330UF 200V 20% 105'C |
| C909 | 9940 000 01086 | COND DISC 0.01UF 1KV 20% |
| C910 | 9940 000 01086 | COND DISC 0.01UF 1KV 20% |
| C911 | 9965 000 27124 | COND METAL 1.5UF 250V |
| C913 | 9940 000 01085 | COND DISC 0.001UF 1KV 20% |
| C914 | 9940 000 01085 | COND DISC 0.001UF 1KV 20% |
| C915 | 9965 000 27125 | COND DISC 0.0022UF 1KV 20% |
| C916 | 9965 000 27126 | COND DISC 100PF 1KV 10% |
| C917 | 9965 000 27127 | COND MYLAR 0.1 UF 100V 5% |
| C923 | 9965 000 27129 | 400V 0.0022UF Y1 P=10MM 125' C |
| C951 | 9940 000 00936 | COND DISC 470PF 1KV 10% |
| C953 | 9940 000 01085 | COND DISC 0.001UF 1KV 20% |
| C954 | 9940 000 00936 | COND DISC 470PF 1KV 10% |
| C955 | 9940 000 00936 | COND DISC 470PF 1KV 10% |
| C956 | 9940 000 00936 | COND DISC 470PF 1KV 10% |
| C958 | 9940 000 00936 | COND DISC 470PF 1KV 10% |
| C959 | 9940 000 00936 | COND DISC 470PF 1KV 10% |
| C961 | 9965 000 27130 | COND ELECT 1000 UF 35V 20% |
| C962 | 9965 000 27130 | COND ELECT 1000 UF 35V 20% |
| C963 | 9965 000 27131 | COND DISC 0.1 UF 100V 80-20% |
| C964 | 9965 000 27131 | COND DISC 0.1 UF 100V 80-20% |
| C977 | 9965 000 27132 | COND MYLAR 0.001 UF 100V 5% |
| C981 | 9940 000 00937 | COND DISC 220PF 1KV 10% |
| C982 | 9940 000 00937 | COND DISC 220PF 1KV 10% |
| C983 | 9940 000 00937 | COND DISC 220PF 1KV 10% |
| C984 | 9940 000 00937 | COND DISC 220PF 1KV 10% |
| C985 | 9965 000 23606 | COND ELECT 1000UF 16V 20% |
| C986 | 9965 000 27131 | COND DISC 0.1 UF 100V 80-20% |
| C992 | 9965 000 27127 | COND MYLAR 0.1 UF 100V 5% |
| C993 | 9965 000 29293 | COND ELECT 220 UF 16 V 20% |
| C994 | 9965 000 27131 | COND DISC 0.1 UF 100V 80-20% |
| C995 | 9940 000 00937 | COND DISC 220PF 1KV 10% |
| CN901 | 9965 000 27100 | CONNECTOR 4 PIN P=3.96MM |

**DIODES**

| | | |
|---|---|---|
| D903 | 9965 000 26949 | DIODE SW 1N4148 PB<1000PPM |
| D904 | 9965 000 26949 | DIODE SW 1N4148 PB<1000PPM |
| D907 | 9940 000 00938 | DIODE PR1507 1.5A 1000V |
| D910 | 9940 000 00941 | DIODE HER104 1A 300V 50NS |
| D951 | 9965 000 27135 | RECTIFIER FEP16DT TO-220AB |
| D952 | 9940 000 00948 | RECTIFIER FEP16AT TO-220AB |
| D954 | 9965 000 26949 | DIODE SW 1N4148 PB<1000PPM |
| D955 | 9965 000 26949 | DIODE SW 1N4148 PB<1000PPM |
| D956 | 9965 000 26949 | DIODE SW 1N4148 PB<1000PPM |
| D957 | 9965 000 26949 | DIODE SW 1N4148 PB<1000PPM |
| D958 | 9965 000 26949 | DIODE SW 1N4148 PB<1000PPM |
| D959 | 9940 000 00941 | DIODE HER104 1A 300V 50NS |
| D960 | 9965 000 27136 | DIODE IN5822 3A/45V PROCESS |
| D961 | 9965 000 26949 | DIODE SW 1N4148 PB<1000PPM |
| ZD902 | 9965 000 27137 | DIODE ZENR 17.5-18.3V 0.5W |
| ZD905 | 9965 000 29294 | COND DISC 0.22 UF 50V 80-20% |
| ZD952 | 9965 000 27138 | DIODE ZENR 3.8-4.0V 0.5W |
| ZD953 | 9965 000 27139 | DIODE ZENR 23.6-24.7V 0.5W |

**TRANSISTOR & INTEGRATED CIRCUIT**

| | | |
|---|---|---|
| IC901 | 9940 000 00946 | OPTICAL SENSOR 4P |
| IC902 | 9965 000 29296 | IC 8P FSDM0365RN DIP |
| IC951 | 9940 000 00949 | IC 8PIN JRC4558D |
| IC952 | 9940 000 00951 | IC 16PIN KA7500C |
| IC953 | 9940 000 00952 | IC 3PIN TL431 |
| Q901 | 9965 000 29295 | STP9NK50Z TO220 ST N-CH LF |
| Q901 | 9965 000 27140 | MOSFET STP9NK60Z TO-220 N- |
| Q902 | 9965 000 29295 | STP9NK50Z TO220 ST N-CH LF |
| Q902 | 9965 000 27140 | MOSFET STP9NK60Z TO-220 N- |
| Q951 | 9965 000 26946 | XISTR PNP 2SB772P/Q NEC |
| Q952 | 9965 000 26946 | XISTR PNP 2SB772P/Q NEC |
| Q953 | 4822 130 11336 | STP16NF06FP |
| Q956 | 9965 000 26939 | XISTR PNP 2SA952 NEC |
| Q957 | 4822 130 41198 | 2SC945P |
| Q958 | 4822 130 41198 | 2SC945P |
| Q959 | 4822 130 41198 | 2SC945P |

**RESISTORS**

| | | |
|---|---|---|
| R909 | 9965 000 27133 | RES.METAL OXIDE FILM 120OHM |
| R910 | 9965 000 27133 | RES.METAL OXIDE FILM 120OHM |
| R978 | 9965 000 27085 | FUSEABLE RES 1/4W 5% |
| R985 | 9965 000 27085 | FUSEABLE RES 1/4W 5% |
| R986 | 9965 000 27085 | FUSEABLE RES 1/4W 5% |

Note : Only the parts mentioned in this list are normal service spare parts.